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OR,

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OF

ARTS, SCIENCES, AND LITERATURE.

PLATES. VOL. II.

BASSO RELIEVO —— HOROLOGY.

Printed by A. Strahan,
New-Street-Square, London.

THE

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OR,

UNIVERSAL DICTIONARY

OF

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BY

ABRAHAM REES, D.D. F.R.S. F.L.S. *S. Amer. Soc.*

WITH THE ASSISTANCE OF

EMINENT PROFESSIONAL GENTLEMEN.

ILLUSTRATED WITH NUMEROUS ENGRAVINGS,

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PLATES. VOL. II.

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LONDON:

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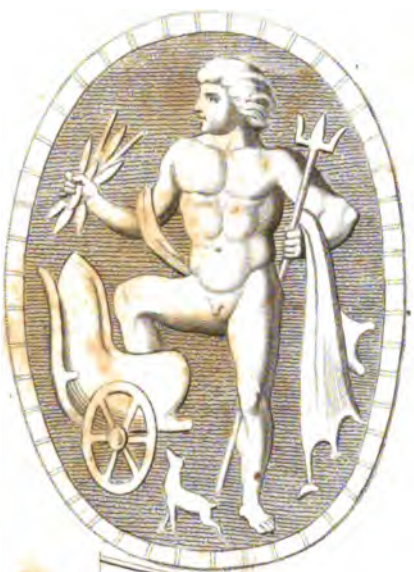
F.C. AND J. RIVINGTON, A. STRAHAN, PAYNE AND FOSS, SCATCHERD AND LETTERMAN, J. CUTHELL, CLARKE AND SONS, LACKINGTON HUGHES HARDING MAVOR AND JONES, J. AND A. ARCH, CADELL AND DAVIES, S. BAGSTER, J. MAWMAN, BLACK KINGSBURY PARBURY AND ALLEN, R. SCHOLEY, J. BOOTH, J. BOOKER, SUTTABY EVANCE AND FOX, BALDWIN CRADOCK AND JOY, SHERWOOD NEELY AND JONES, OGLE DUNCAN AND CO., R. SAUNDERS, HURST ROBINSON AND CO., J. DICKINSON, J. PATERSON, E. WHITESIDE, WILSON AND SONS, AND BRODIE AND DOWDING.

1820.

BASSO RELIEVO.

An Egyptian Hieroglyphical Sphinx.

1



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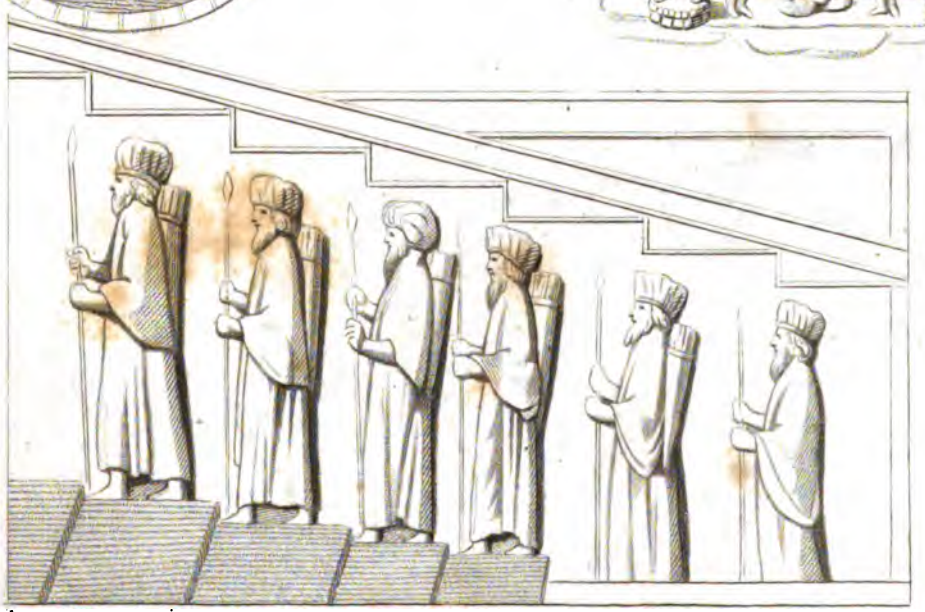


3

Hindu Basso Relievo — British Museum.

Published as the Act directs Dec. 1st 1807 by Longman Hurst Rees & Orme. Paternoster Row.

Bond Sculp.

BASSO RELIEVO.

Hercules and Apollo contending for the Tripod from the Villa Albani.

Minerva subduing Hercules.—British Museum.

Published as the Act directs Dec.1st 1807 by Longman Hurst Rees & Orme Paternoster Row.

Bond sculp.

BASSO RELEIVO.

THE TOMB STONE OF XANTHIPPUS FATHER OF PERICLES.

Brought from Athens by Dr. Askew

In the Poſſeſsion of Charles Townley Esqr.

Drawn by J. Flaxman R.A. *Published as the Act directs, Jan.y 1st 1804, by Longman & Rees, Paternoster Row.* *Engraved by J. Parker*

BASSO-RELIEVO.

PAGAN ALTARS.

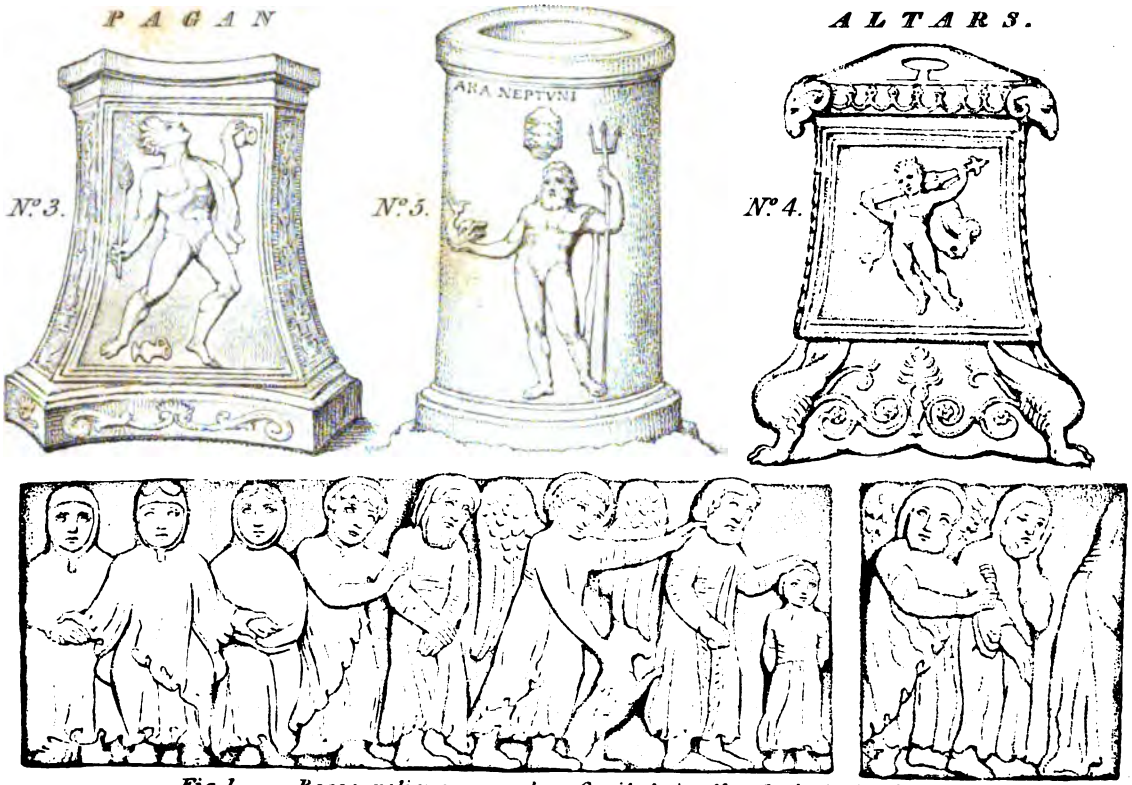


Fig. 1. — Basso-relievo round a Capital in the Cathedral of Carrara.

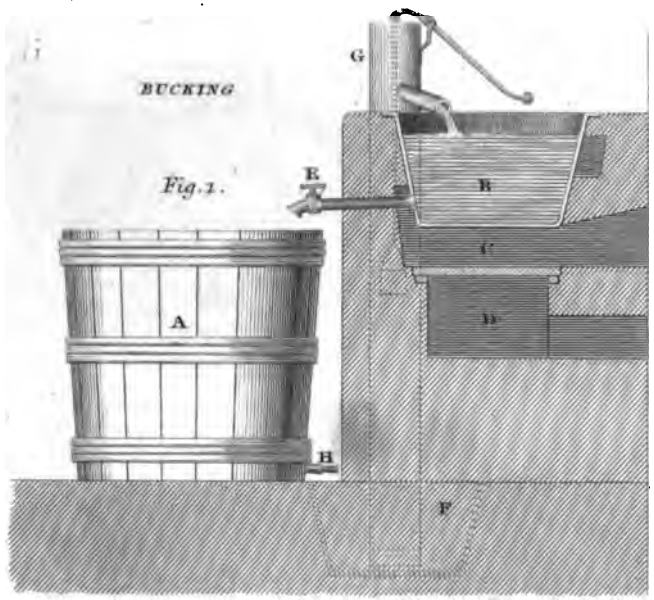
Altars — N°. 2.

Fig. 2. — Basso-relievo of Zethus Antiope & Amphion.

Altars — N°. 1.

BUCKING

Fig. 1.



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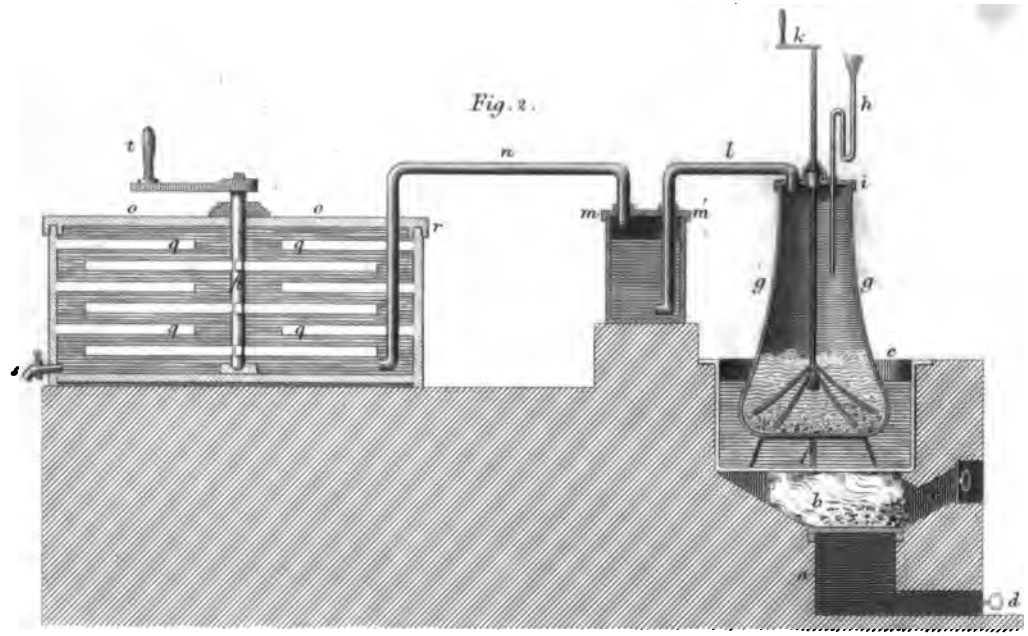
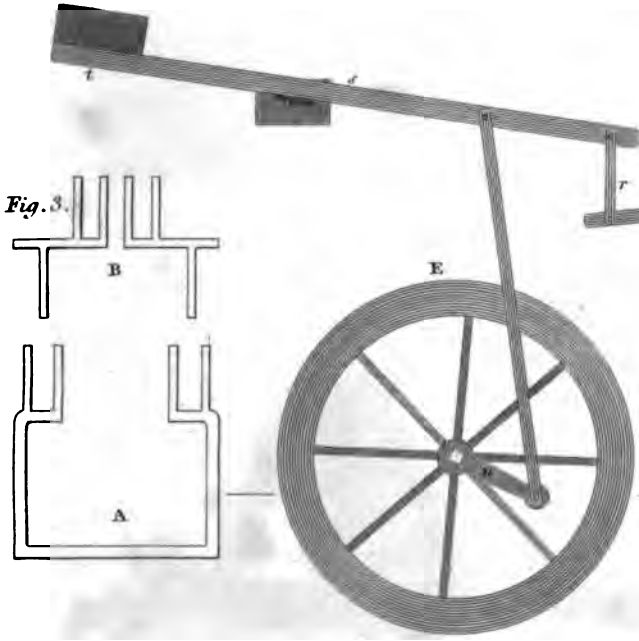


OXI-MURIATIC ACID

Fig. 3.



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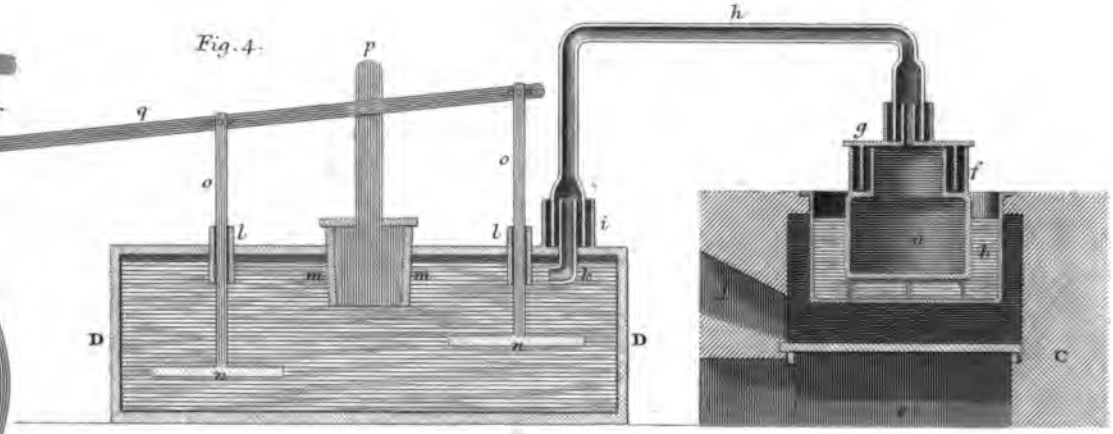

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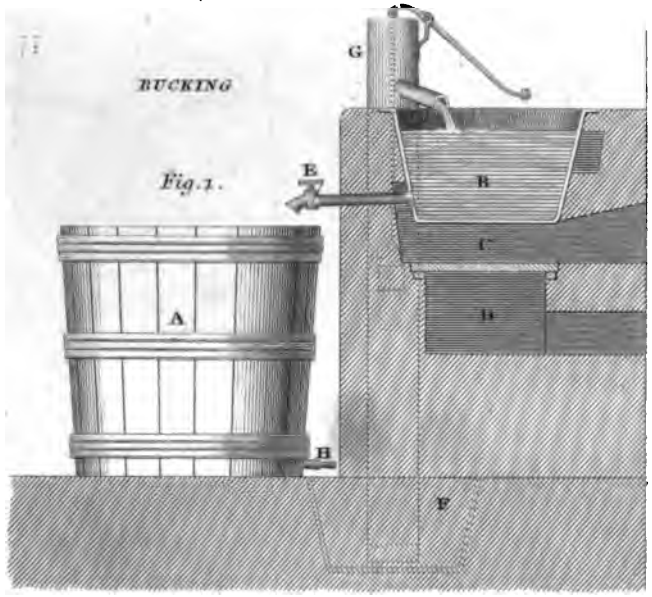
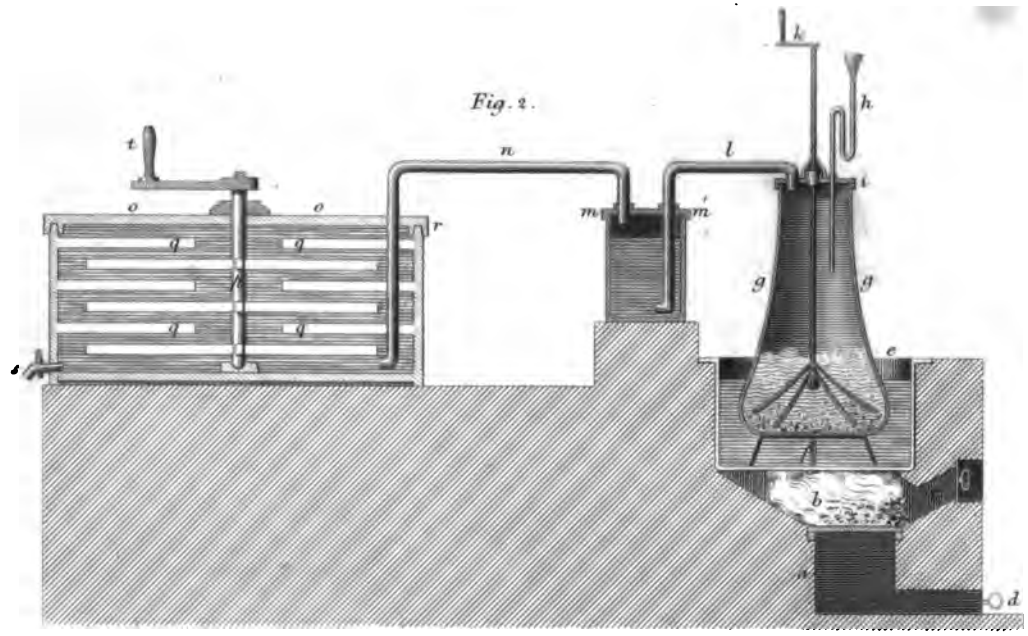
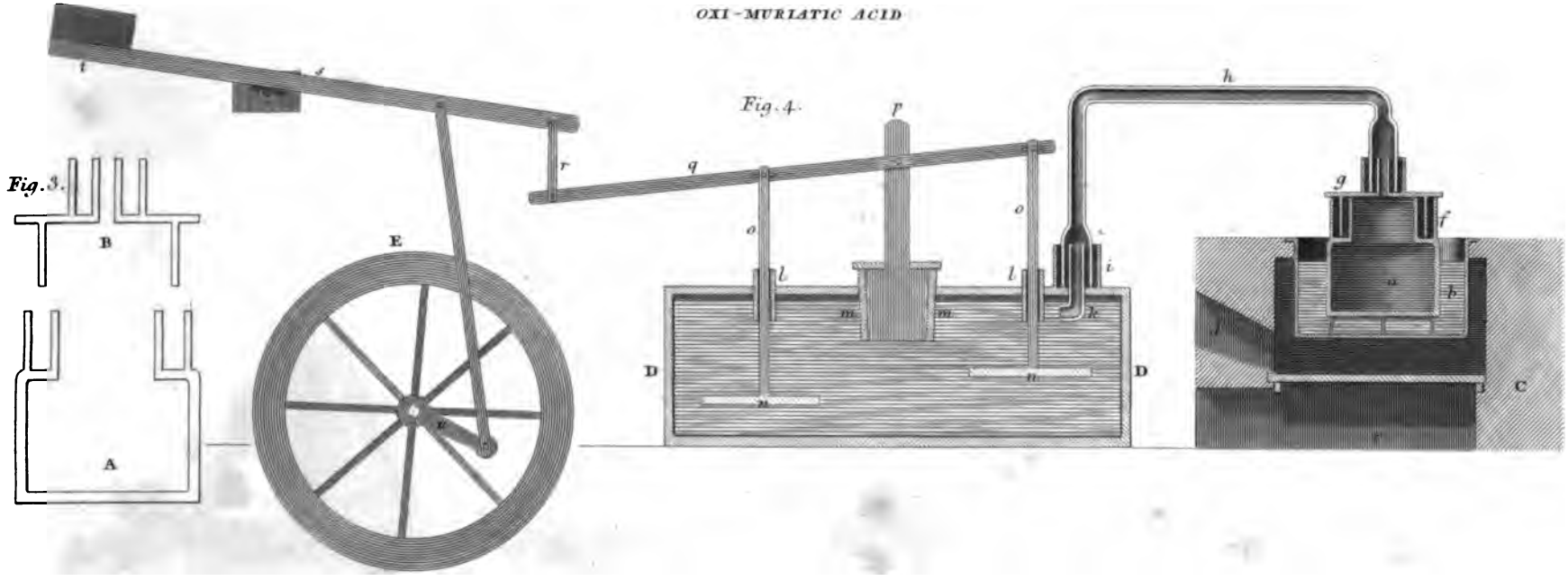
Engraved by Wilson Lowry.

BLEACHING.





OXI-MURIATIC ACID



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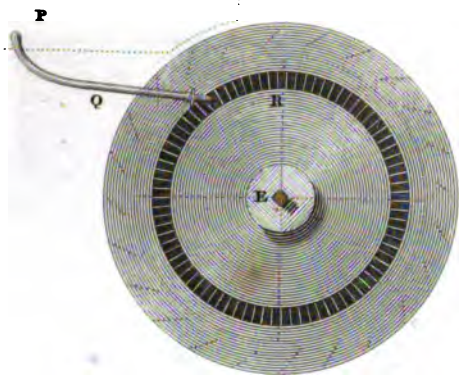
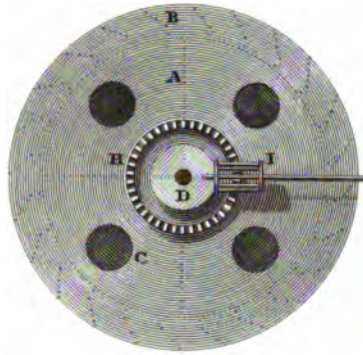
BLEACHING.

WASHING & CLEARING.

Fig. 2.





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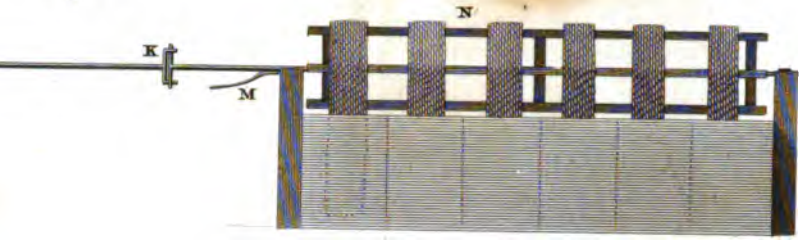
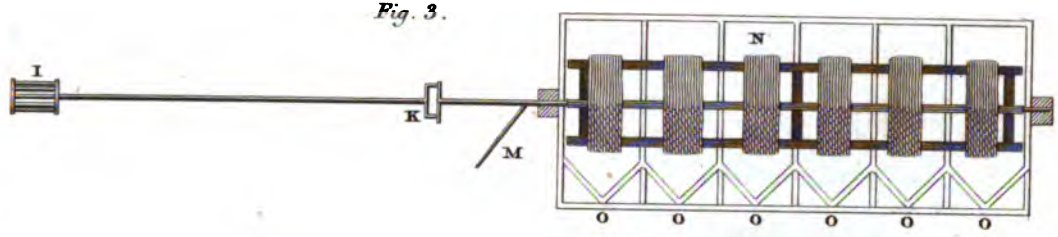


Fig. 3.



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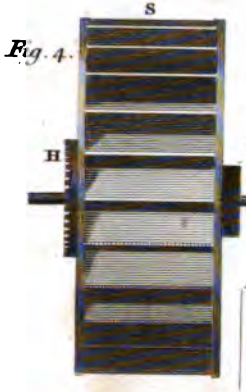

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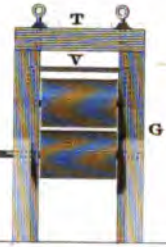

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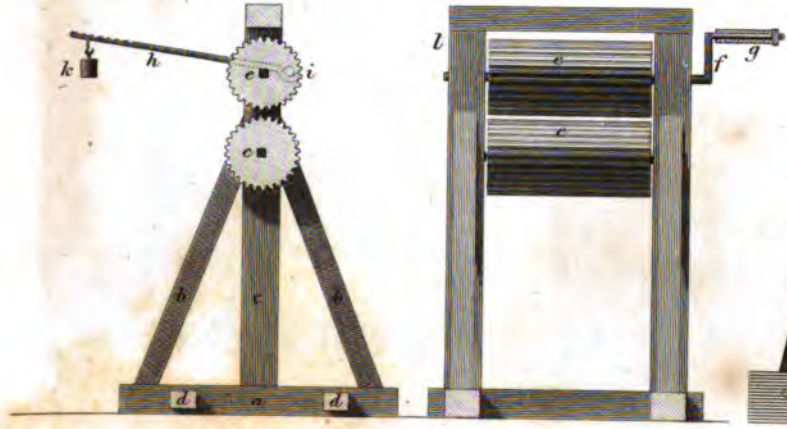

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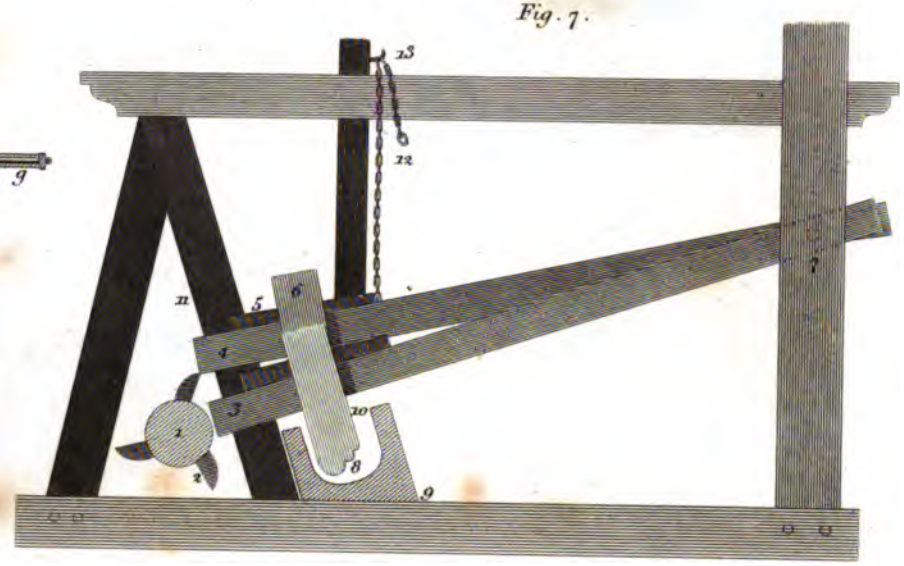

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BLEACHING.

DRYING.

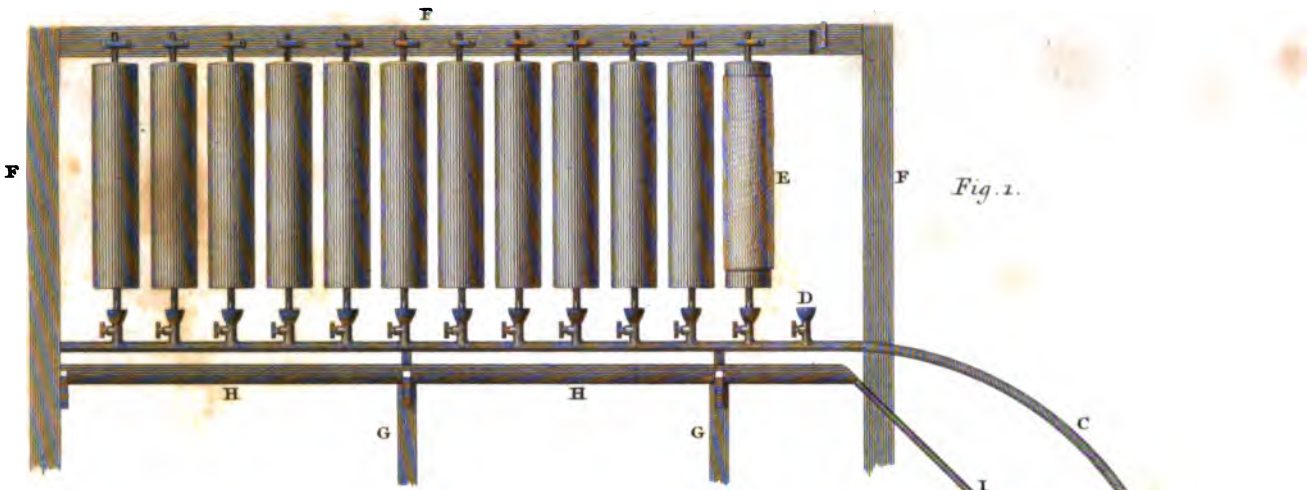


Fig. 1.

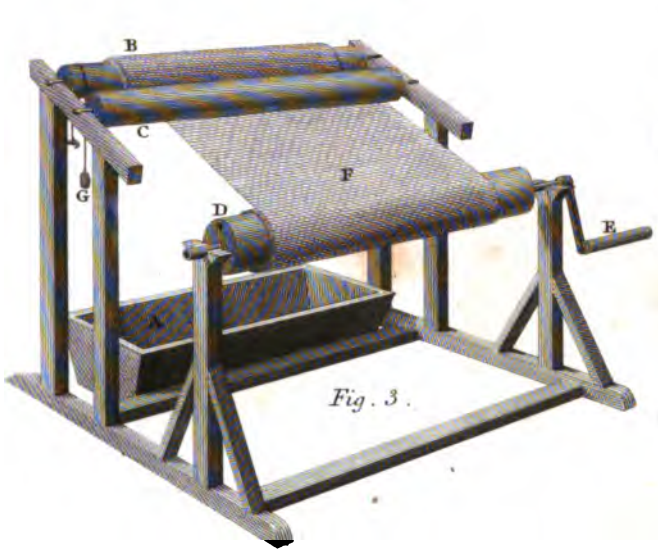
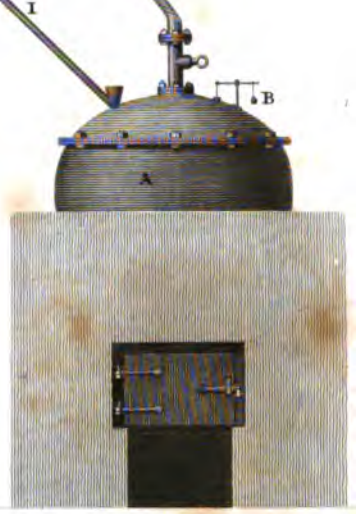


Fig. 3.

Fig. 2.



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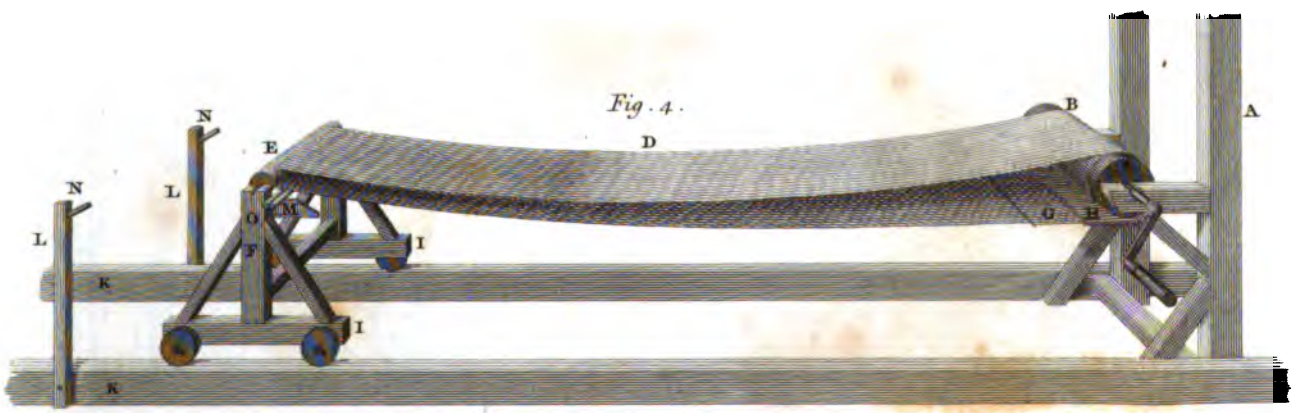

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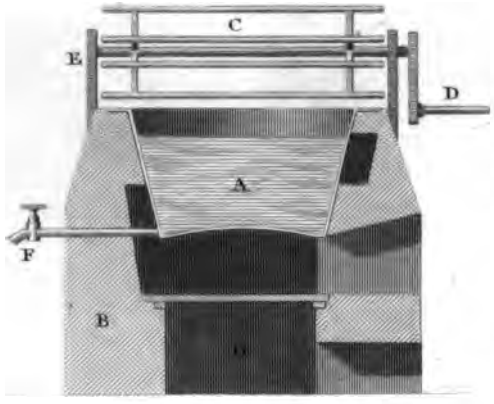
BLEACHING.

Fig. 1.



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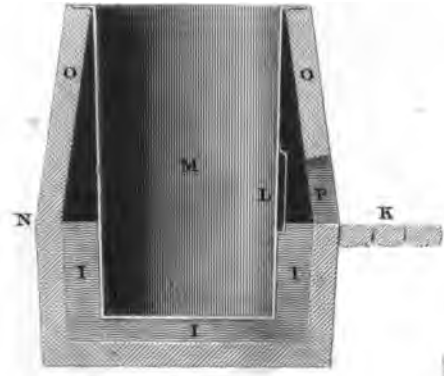

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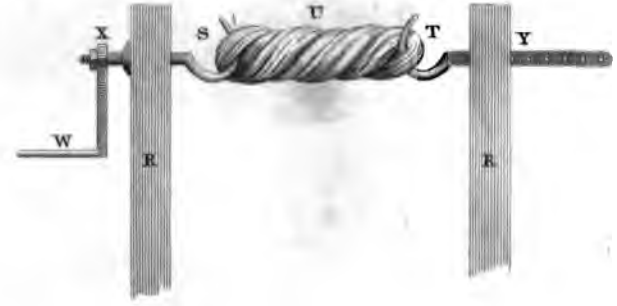

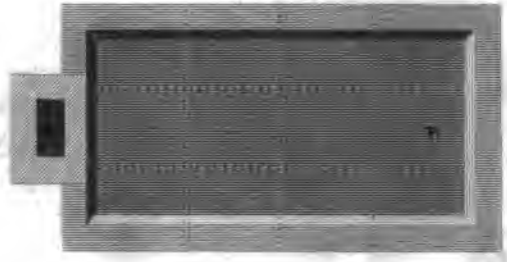

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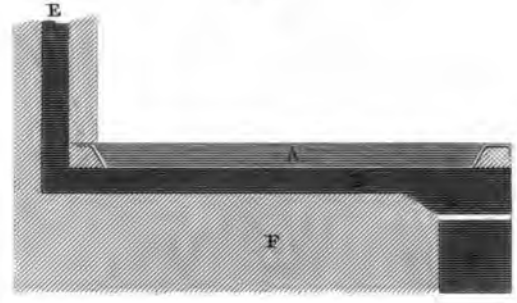

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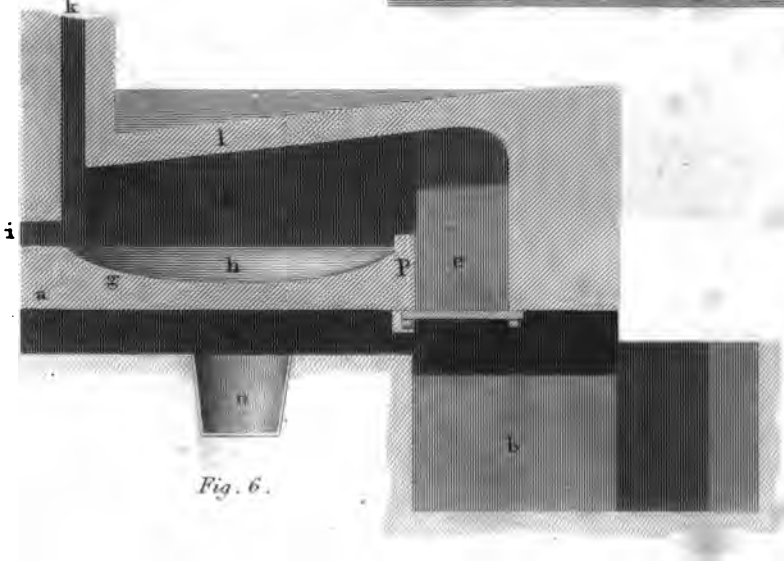

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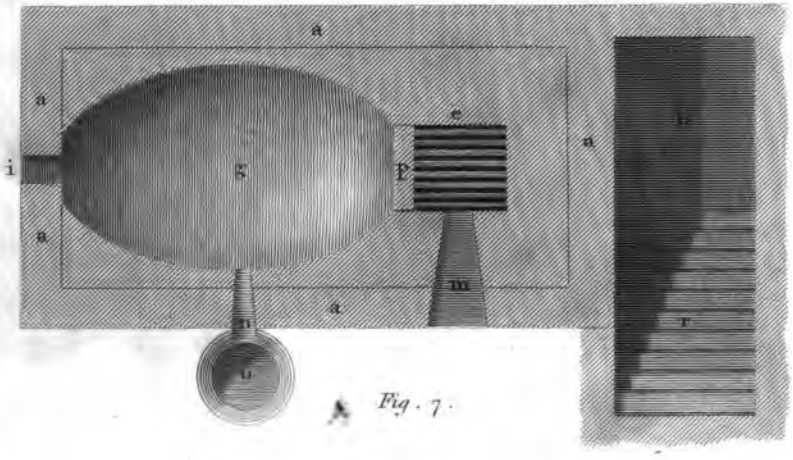

Fig. 7.

Drawn by C. Varley

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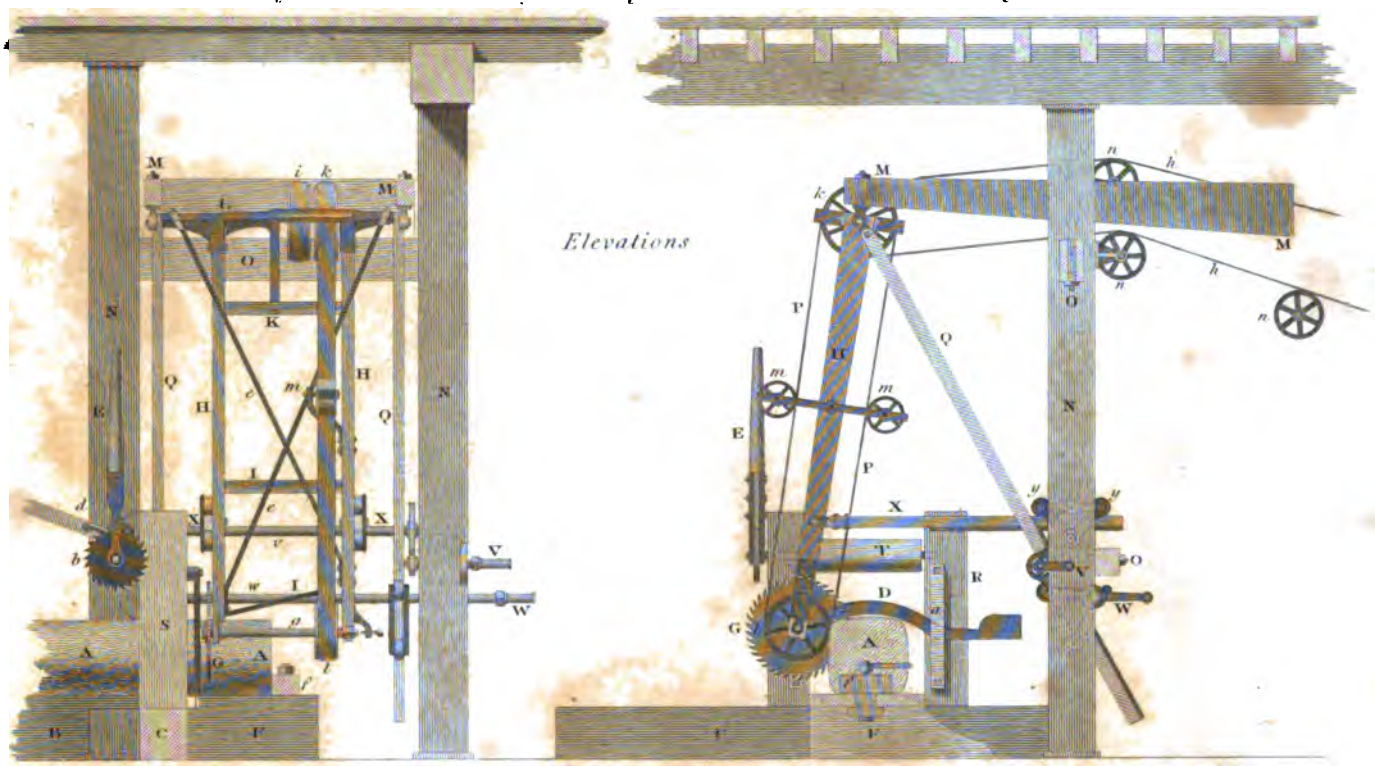
Engraved by Wilson Lowry

MACHINERY.

BLOCK MACHINERY AT PORTSMOUTH.

PLATE I.

Fig. 1. *Sawing Machine.* *Fig. 2.*



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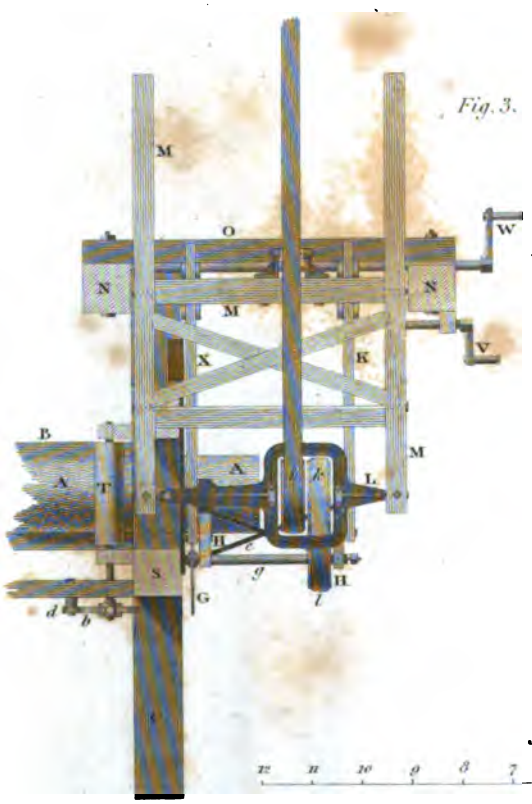

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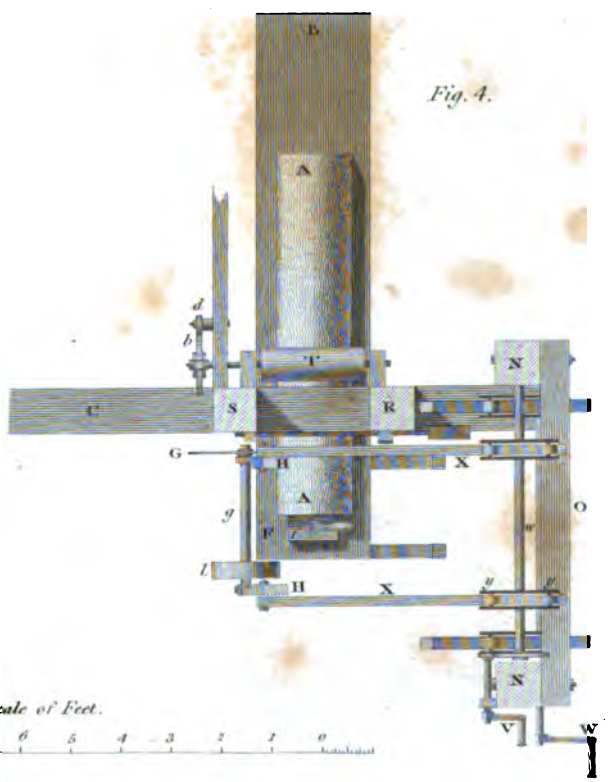

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Lowry sculp.

Fig. 1.

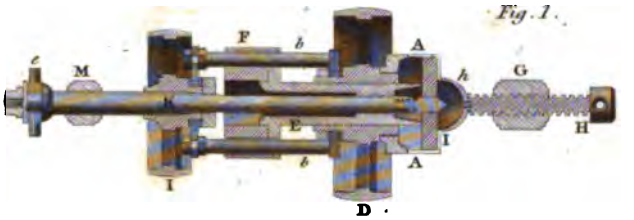


Fig. 2.

Crown Saw.

Fig. 3.

Fig. 9.

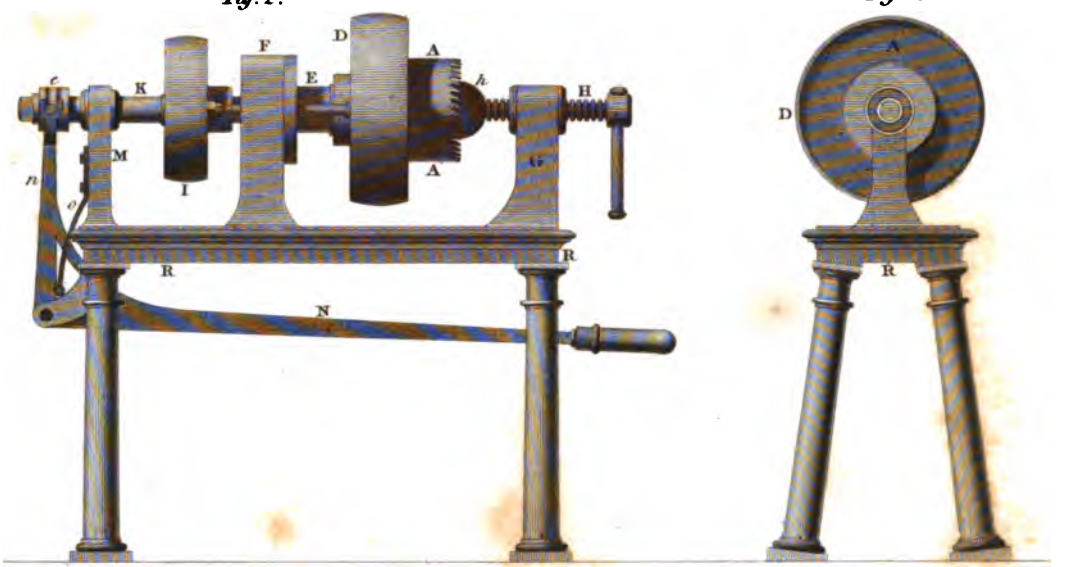
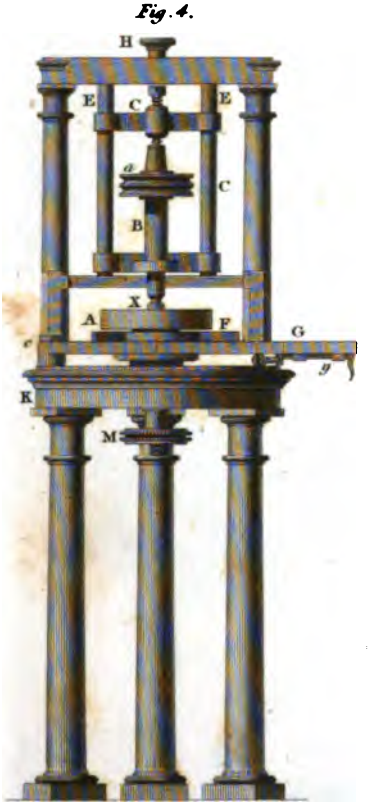


Fig. 4.

PLATE B.



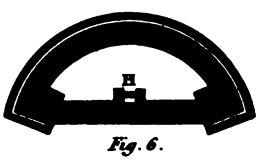


Fig. 6.

Coaking Engine.

Fig. 8.

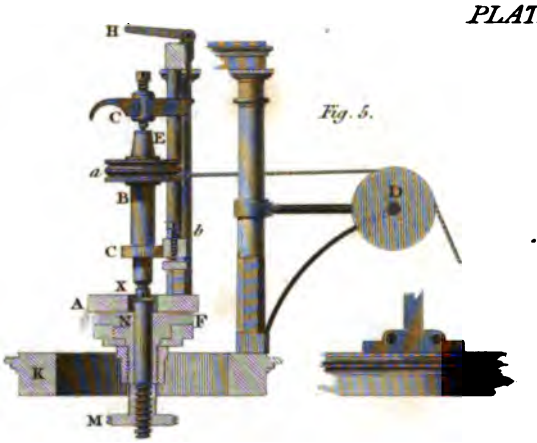


Fig. 5.

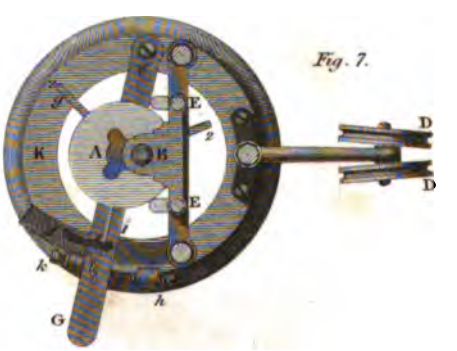


Fig. 7.

BLOCK MACHINERY AT PORTSMOUTH.

Face turning Lathe & Riveting Hammer.

Fig. 1.

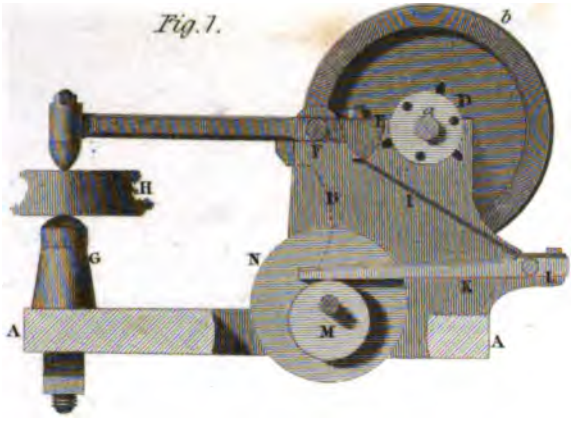


Fig. 3.

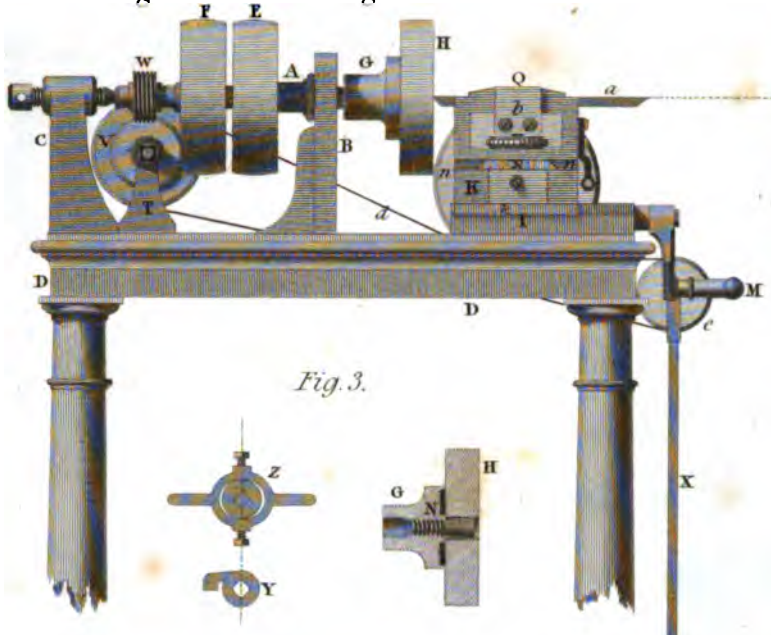
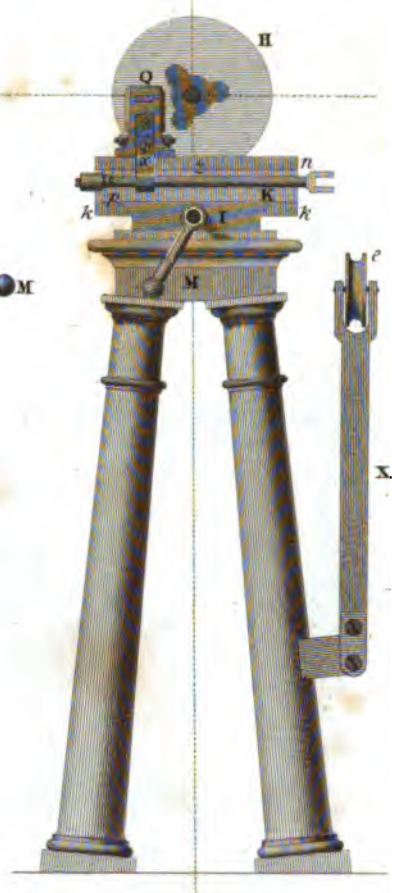
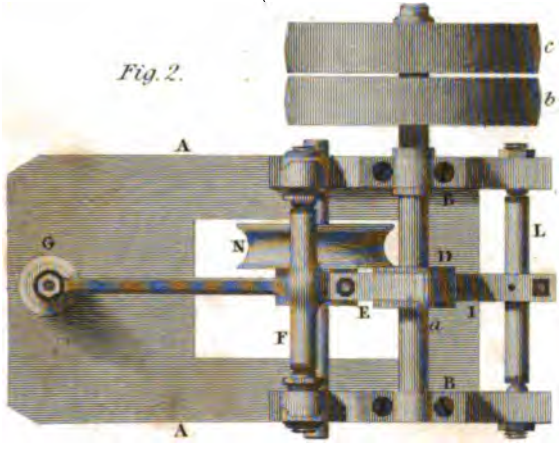


Fig. 4.



Riveting Hammer.

Fig. 2.



Lathe.

Fig. 5.

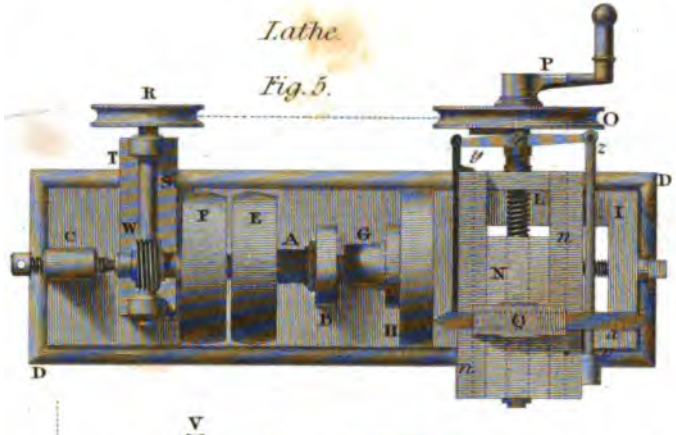
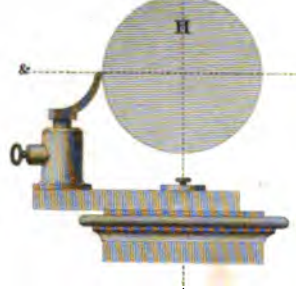


Fig. 6.

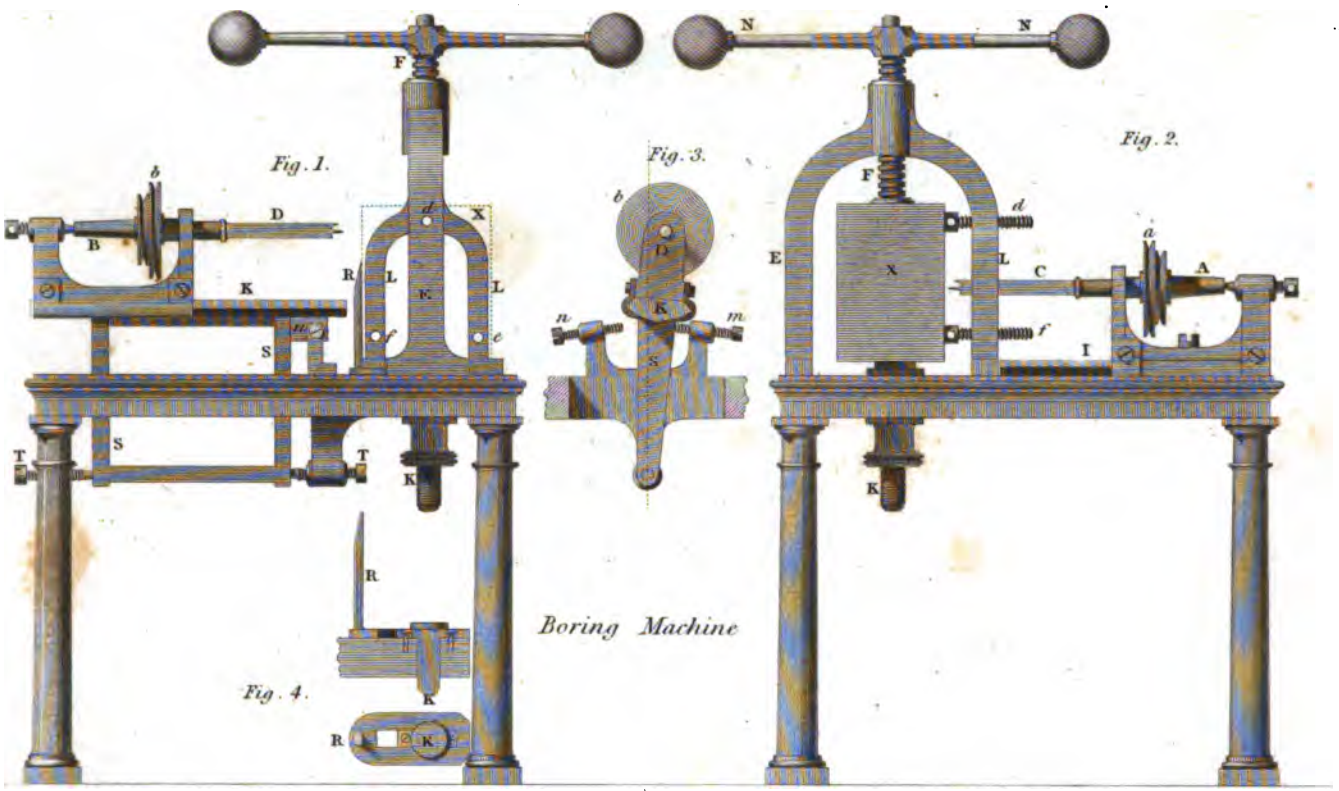
Fig. 7.

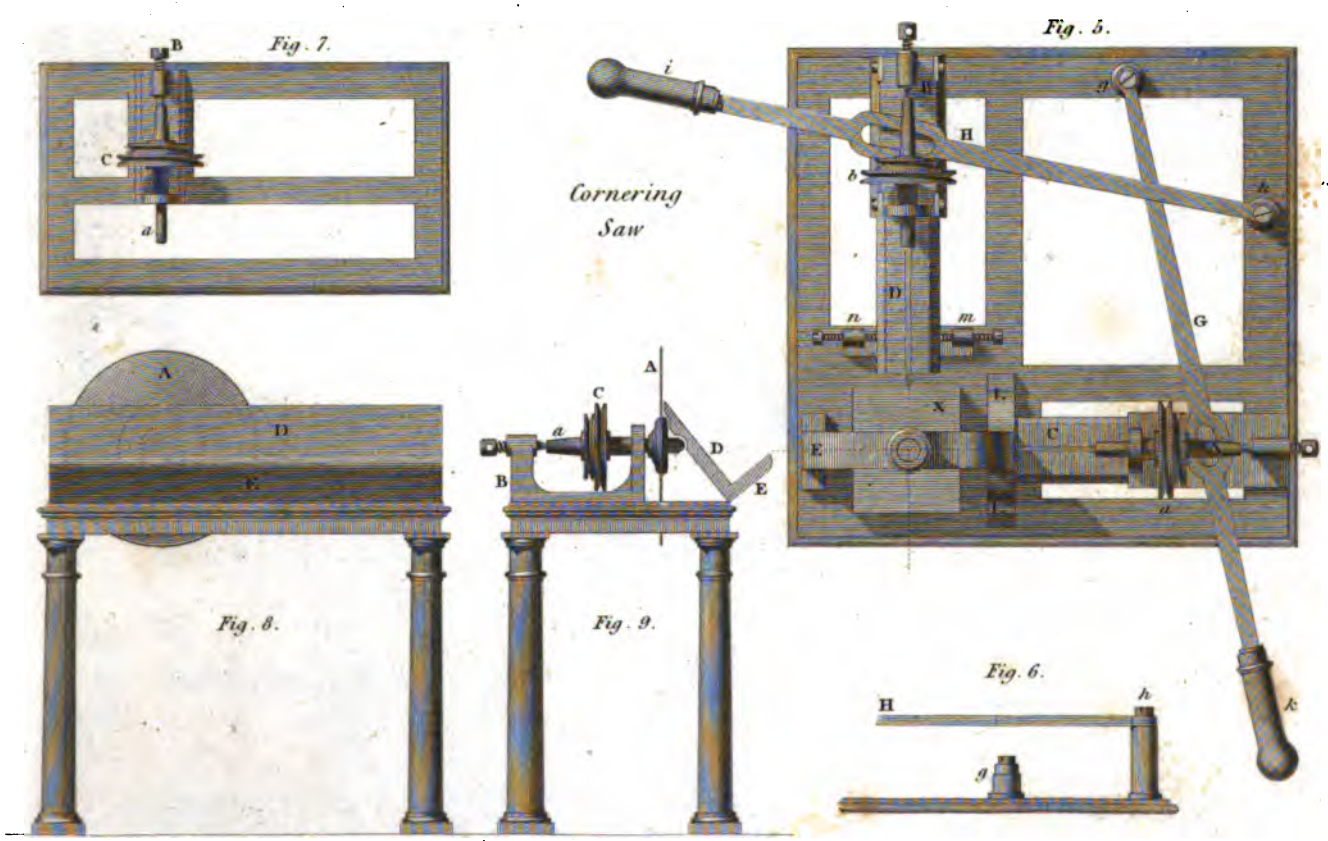


J Farey Jun.r del.

Published as the Act directs 1st by Longman Hurst Rees Orme & Brown Paternoster Row.

Engraved by Wilson Lowry.





J. Farey delin. Published as the Act directs, 1815, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Lowry sculp.

BLOCK MACHINERY AT PORTSMOUTH.

Fig. 1.

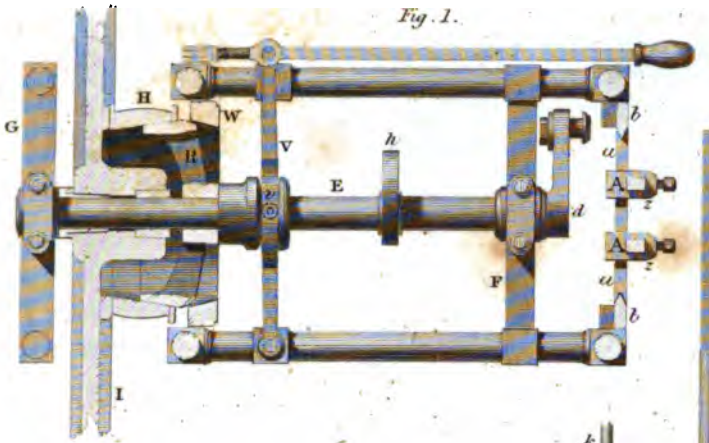
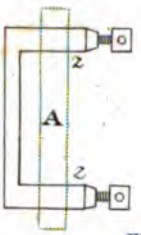


Fig. 6.



Mortising Machine.

Fig. 2.

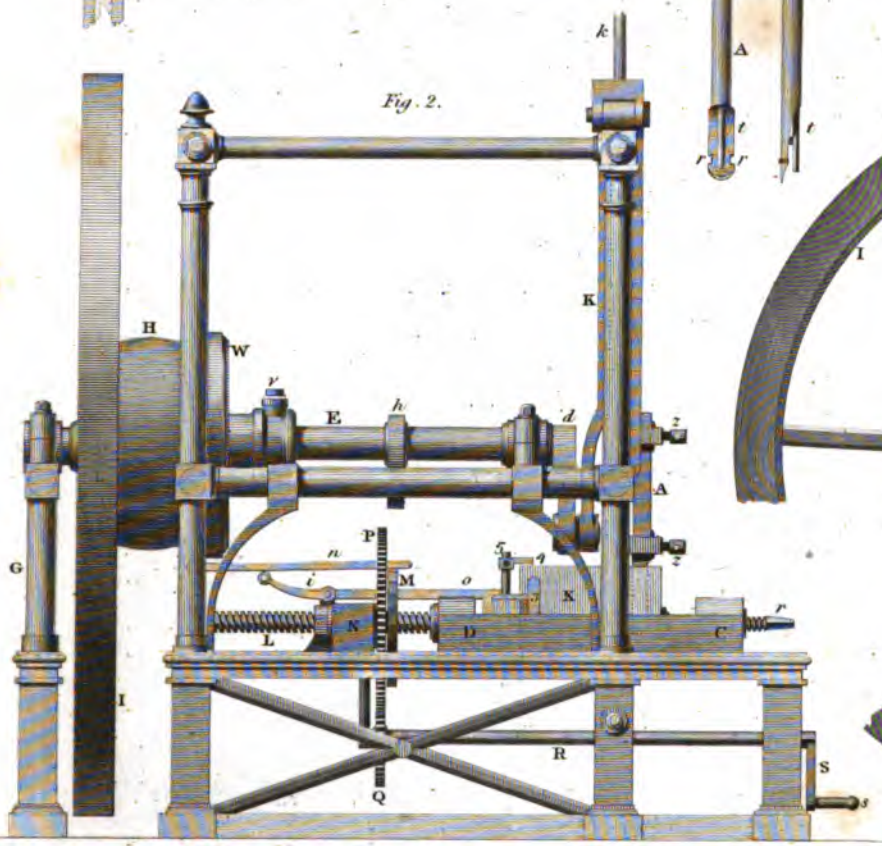


Fig. 3.

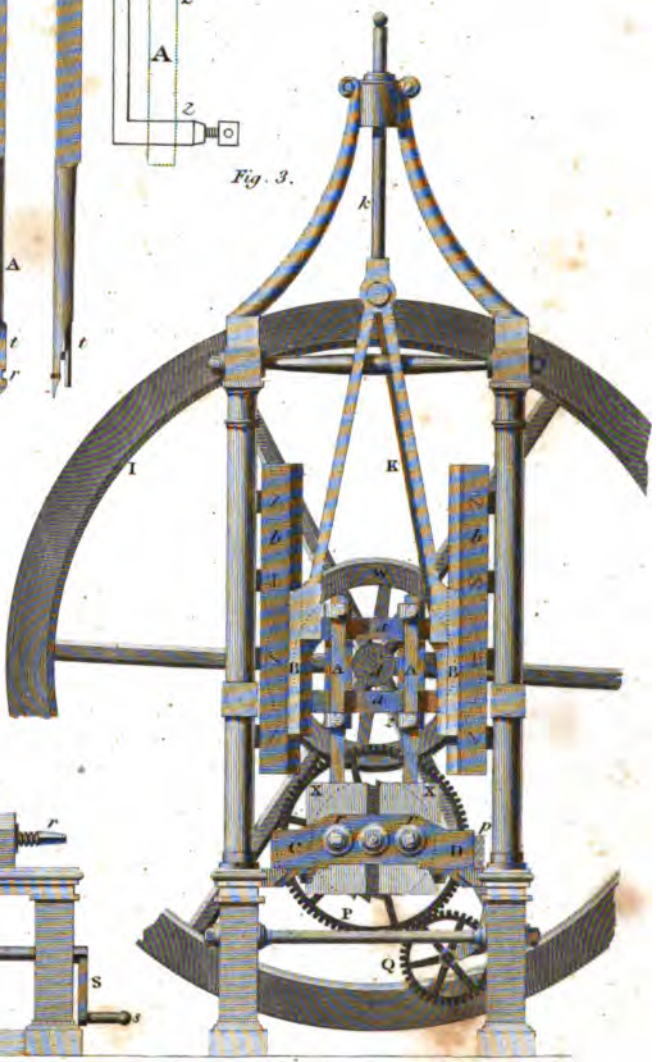


Fig. 4.

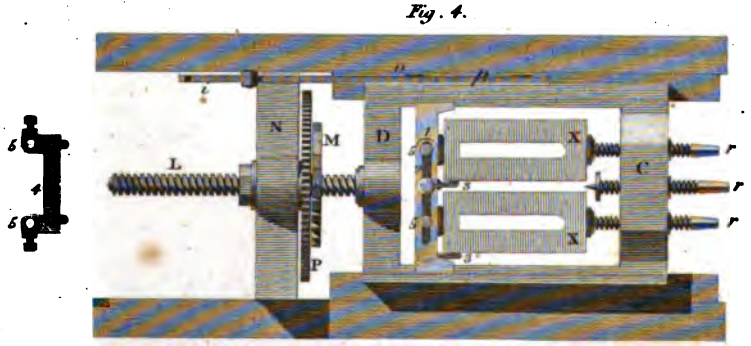
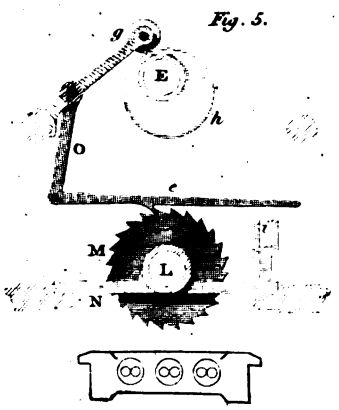


Fig. 5.



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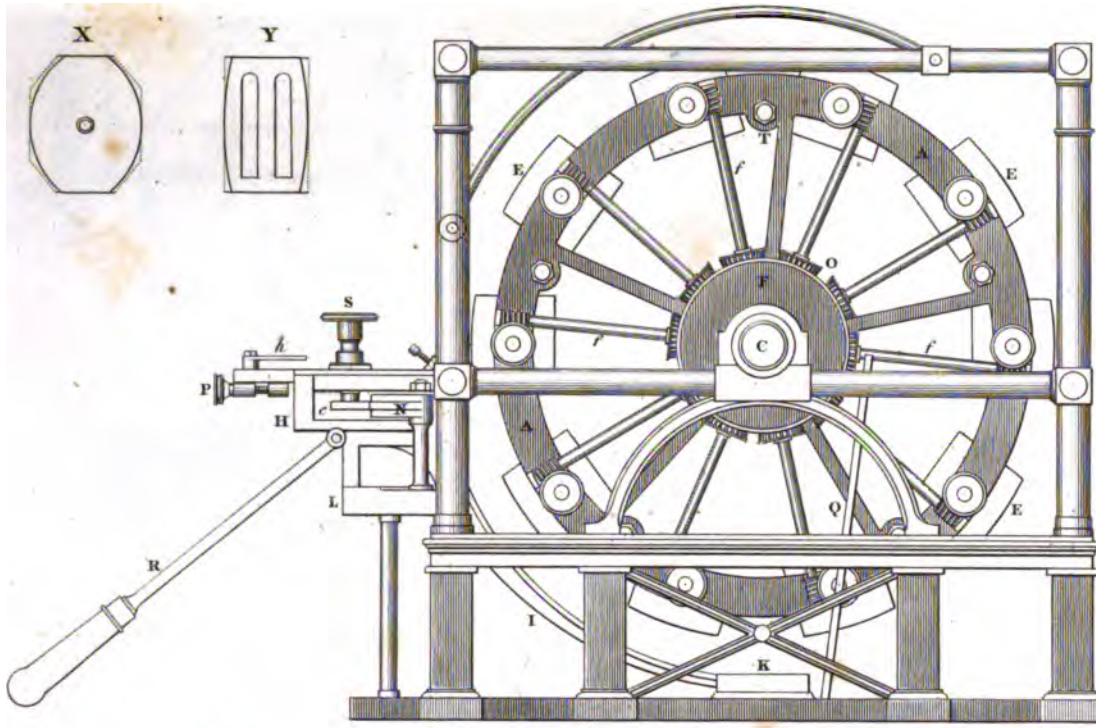
MACHINERY.

BLOCK MACHINERY AT PORTSMOUTH.

SHAPING Engine.

Elevation Fig. 1.



End View. Fig. 2.

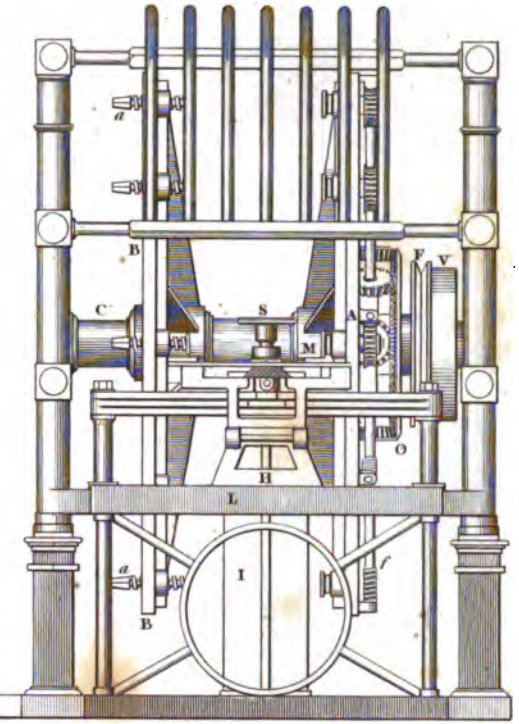


Fig. 3. Plan.

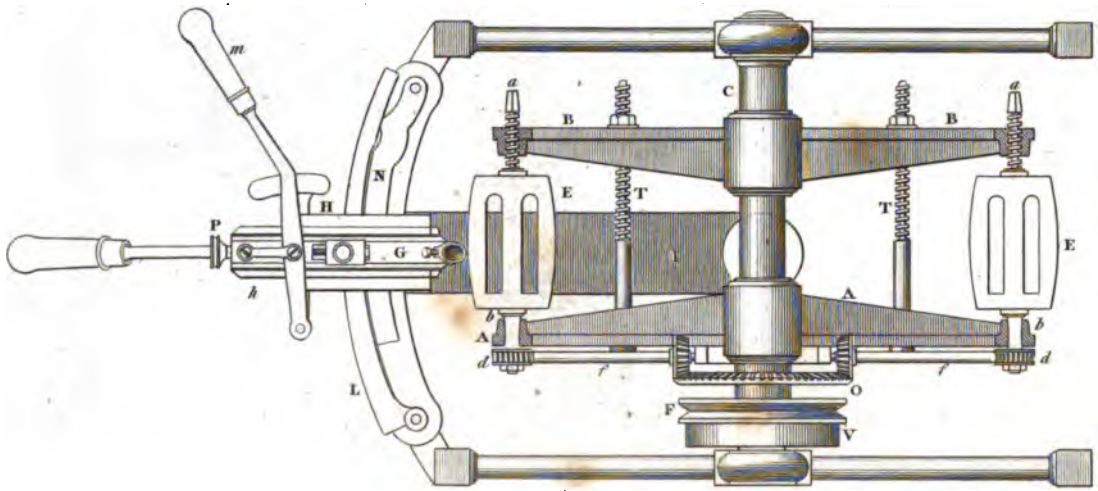
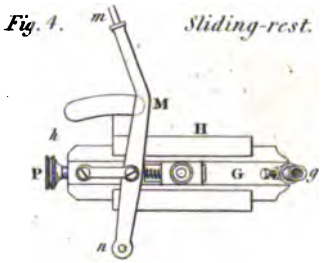
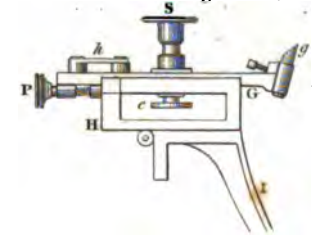


Fig. 4. Sliding-rest.



Gouge.

Elevation Fig. 5.



J. Farey Jun. del.

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Lowry sculp.

Invented by Mr. Brunel.

Fig. 1.

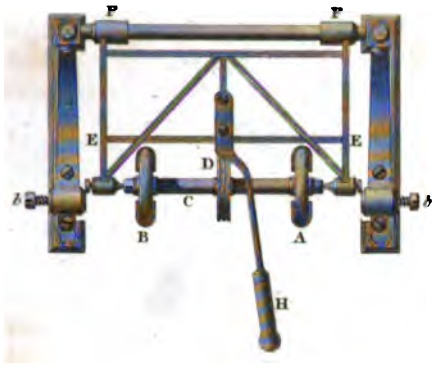


Fig. 2.

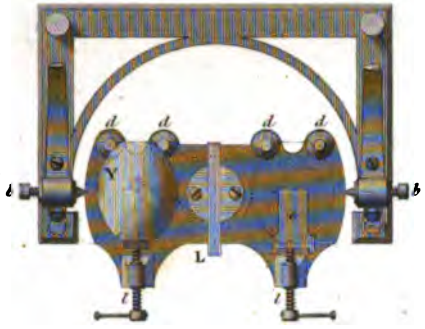
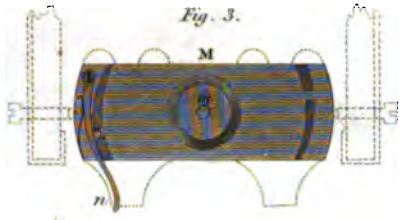


Fig. 3.



SCORING Engine.

Fig. 4.

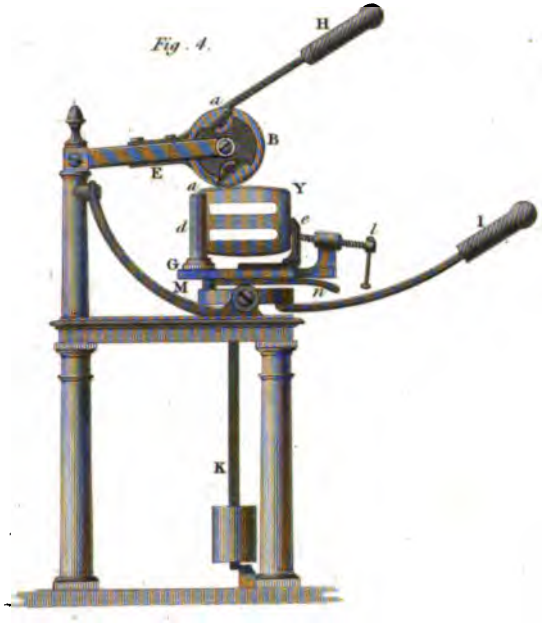


Fig. 5.

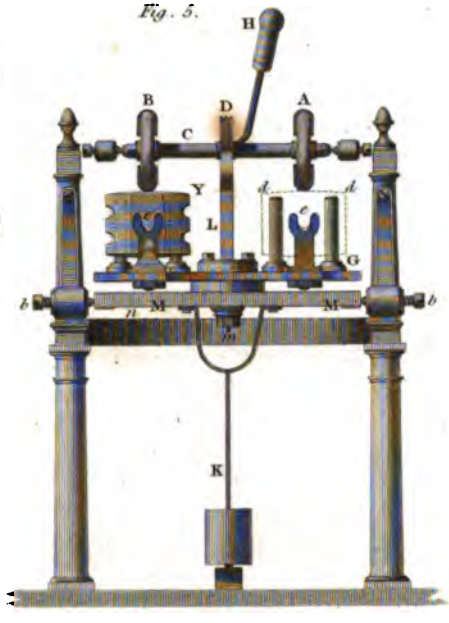


Fig 6.

Machine for Making Dead Eyes.

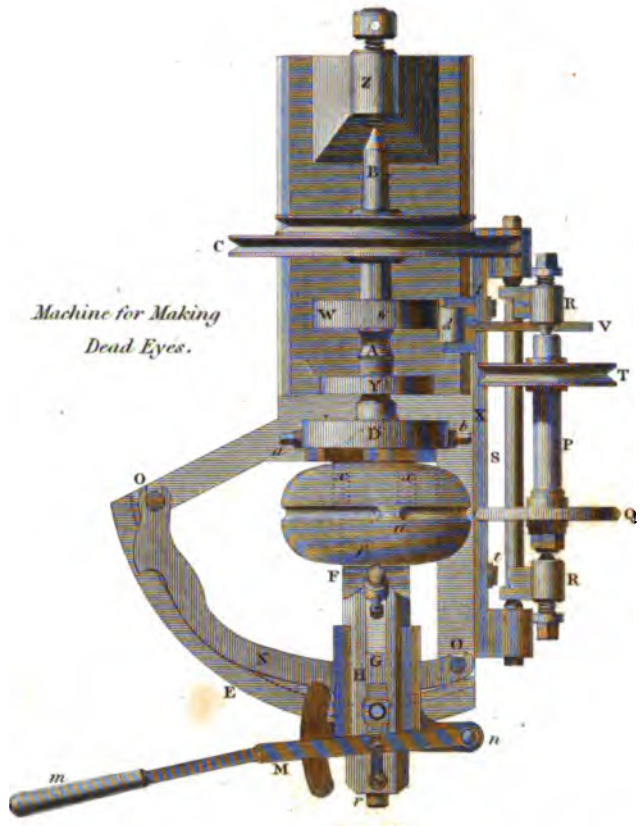
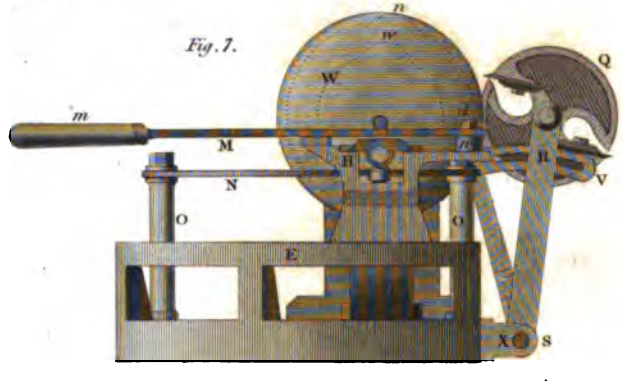


Fig. 7.



J. Farey delin.

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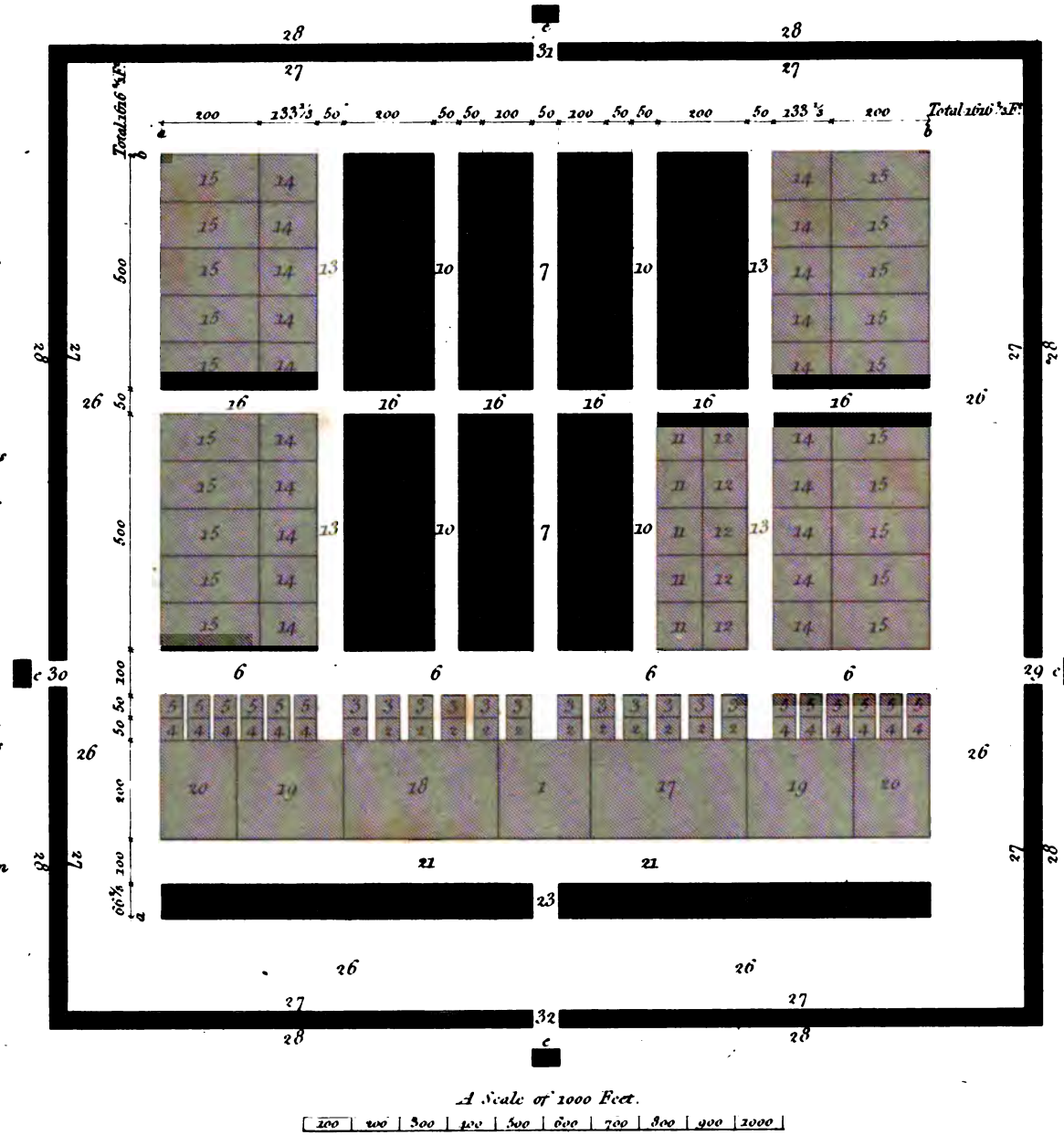
Lowry Sc.

CAMP.

PLAN OF A ROMAN CONSULAR CAMP ACCORDING TO POLYBIUS.



A Scale of 1000 Feet.

200 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000

EXPLANATION AND REFERENCES.

1. The Praetorium or General's ground set apart for the Consul containing 40000 Roman square feet.
2. Ground behind the tents of the Tribunes for their Horses, Beasts of Burthen, Baggage &c.
3. Ground where the tents of the Tribunes were pitched.
4. Ground behind the tents of the Prefecti of the Allies for their Horses, Beasts of Burthen, Baggage &c.
5. Ground where the tents of the Prefecti of the Allies were pitched.
6. A croſs street 100 feet wide called Principia, from which the encampments of the cavalry and infantry both of the Roman legions and of their Allies had their beginnings or commencements.
7. A street 60 feet wide between the Roman Horse.
8. The Horse of two Roman legions in ten troops each.
9. The Triarii of two legions in ten Maniples each.
10. Two streets 50 feet wide each between the Triarii and Principes of two legions
11. The Principes of two legions in ten Maniples each.
12. The Hastati of two legions in ten Maniples each.
13. Two streets 50 feet wide each between the Hastati of the two Roman legions and the Horse of the Allies.
14. The Horse of the Allies wanting the Extraordinarii.
15. The Infantry of the Allies wanting the Extraordinarii, who amounted to a fifth part of their whole number in ten divisions each on the right and left sides of the Encampment.
16. Via Quintana 50 feet wide running acroſs the camp between the fifth and sixth Maniples and troops reckoned from the Principia.
17. The Quaestorium. 18. The Forum.
19. Quarters or encamping ground for the Horse guards of the Consul and Quaestor.
20. Quarters for the Foot guards of the Consul and Quaestor.
21. A croſs street 100 feet wide.
22. The extraordinary Horse except those selected for the guards of the Consul and Quaestor.
23. A street 60 feet wide.
24. The extraordinary Foot except those selected for the guards of the Consul and Quaestor.
25. Quarters for any strangers that might arrive at the Camp.
26. A space two hundred feet broad between the outermost tents and the Rampart.
27. The Rampart. 28. The Ditch.
29. Porta principalis dextra.
30. Porta principalis sinistra.
31. Porta Decumana according to some but Porta Praetoria according to others.
32. Porta Praetoria according to some, but Porta Decumana according to others.

a.b. a.b. Two right lines on which are marked the principal dimensions of the different parts of the camp shewing the whole to be a square or an equilateral right angled quadrangle.

c. A Traverse Breastwork or Epaulement with a ditch before it opposite to each of the Gates.

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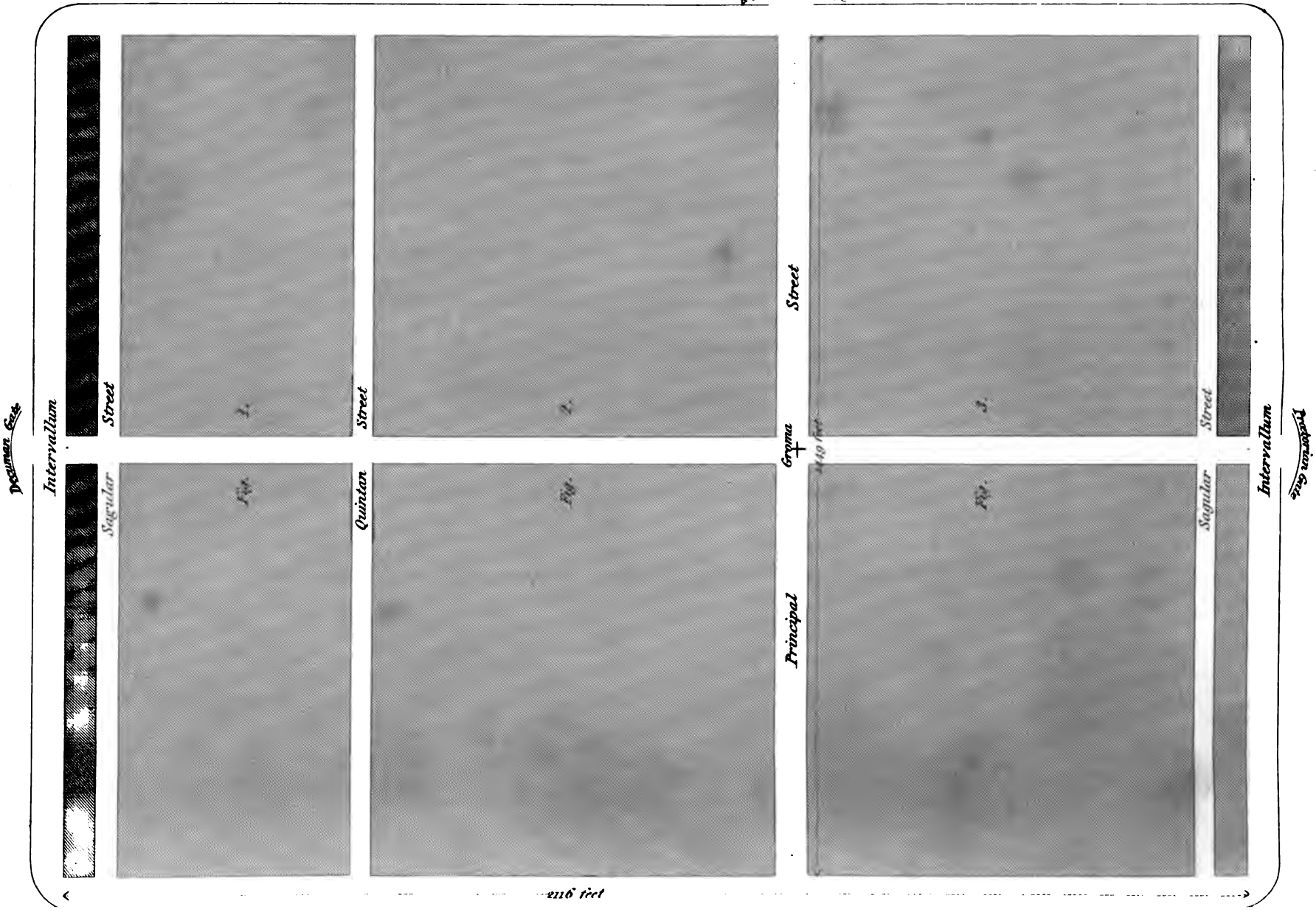
Engraved by Wilson Lowry.

CAMP.

***PLAN of the CAMP of a ROMAN ARMY**, consisting of Three Legions with their Supplementa or Auxiliaries, amounting to 42,626 men, according to the Hyginian System of **CASTRAMETATION**.*

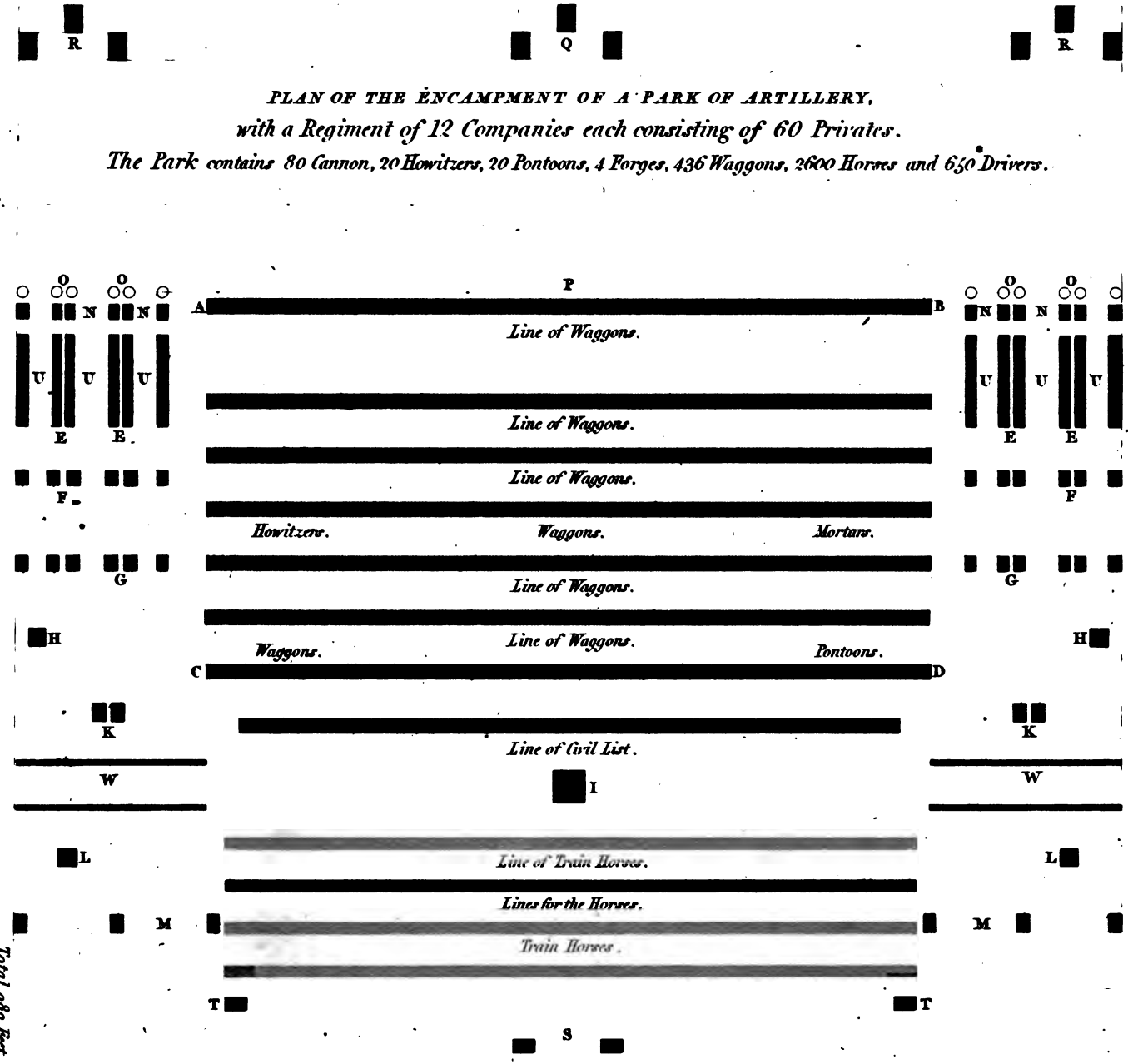
*The total length of the **CAMP** from front to rear is 2310 Roman Feet or 2232 English Feet, and its extreme breadth from right to left is 1620 Roman Feet or 1565 English Feet. The intervallum is 60 Roman Feet wide or 158 English; and the length of the space, that was occupied by the troops, is 2116 English Feet, and its breadth 1449.*



ARTILLERY.

ENCAMPMENT.

PLAN OF THE ENCAMPMENT OF A PARK OF ARTILLERY,
with a Regiment of 12 Companies each consisting of 60 Privates.
The Park contains 80 Cannon, 20 Howitzers, 20 Pontoons, 4 Forges, 436 Waggons, 2600 Horses and 650 Drivers.



EXPLANATION.

A.B.C.D. *Bounds of the Park.*
E. *Artillery Ground.*
F. *Subalterns Tents.*
G. *Captains Tents.*
H. *Lieutenant Colonel. and Majors Tents.*
I. *Colonels Tent.*
K. *Staff Officers Tents.*
L. *Grand Sutlers Tents.*
M. *Petit Sutlers Tents.*
N. *Serjeants Tents.*
O. *Bells of Arms.*
P. *Alarm or Evening Guns.*
Q. *Army Guard.*
R. *Artillery Guard.*
S. *Rear Guard.*
T. *The Forges.*
U. *The Streets.*
W. *The Batmens Tents, and Horses of the Regiment.*

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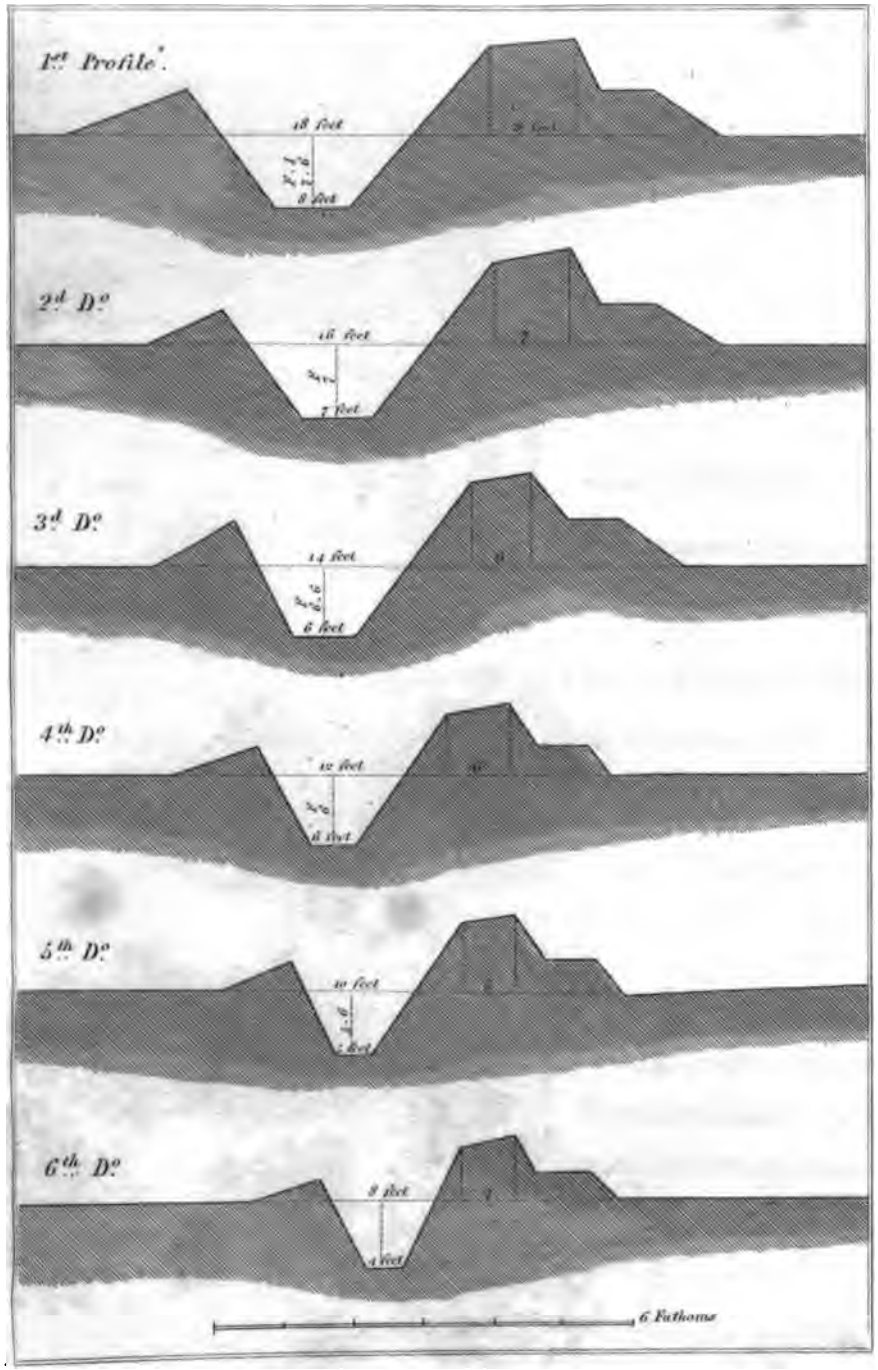
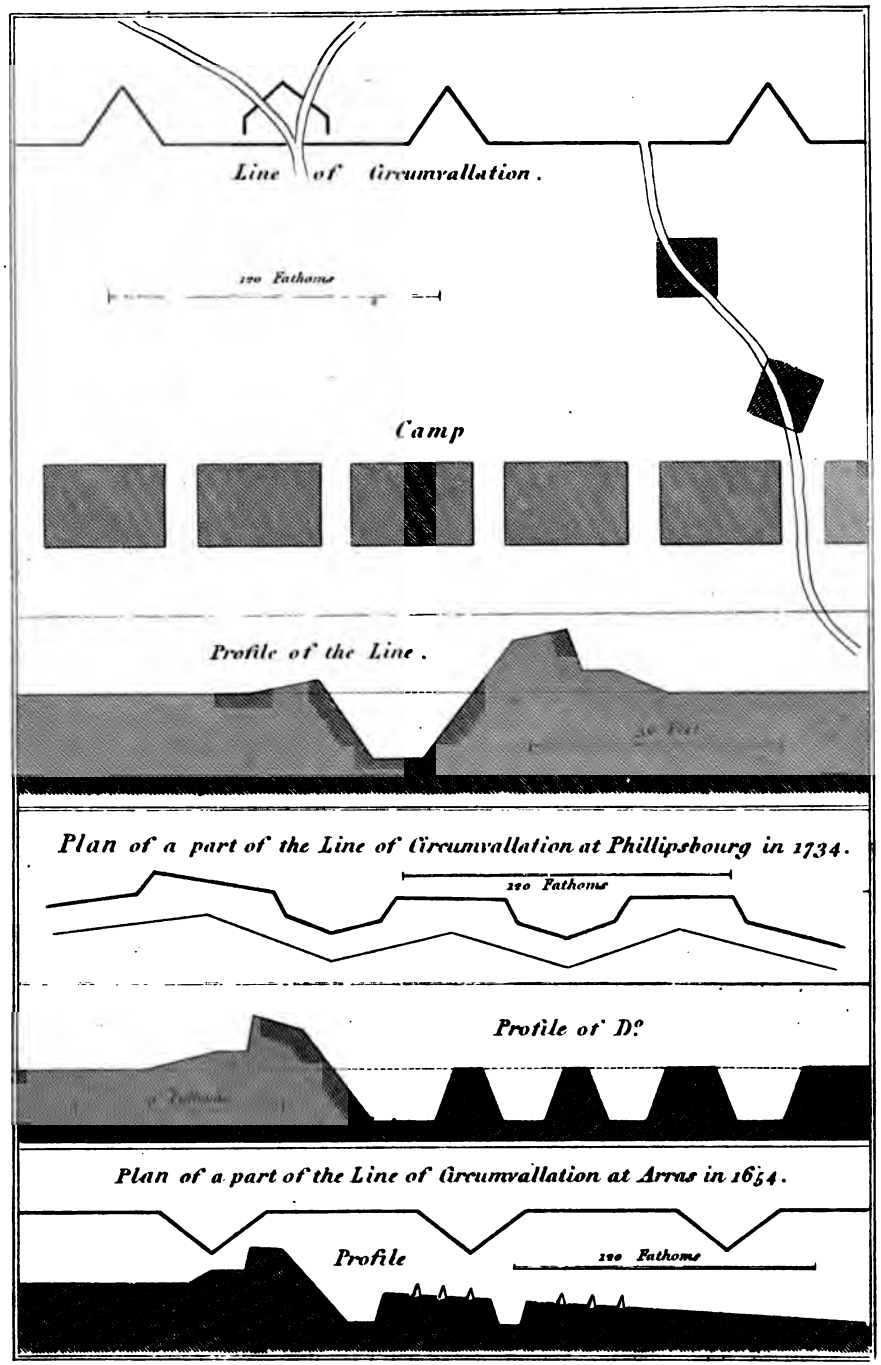
Profiles of Lines of Circumvallation according to Vauban.



Lines of Circumvallation with Camp.



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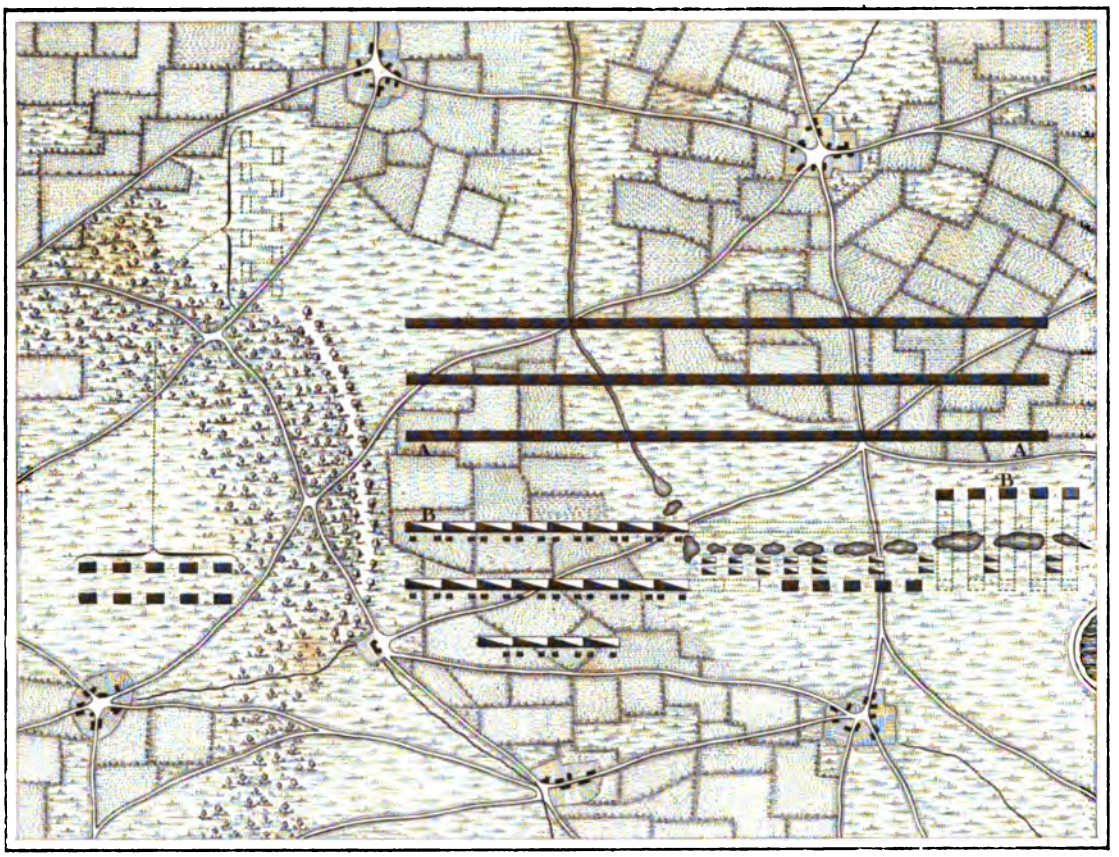
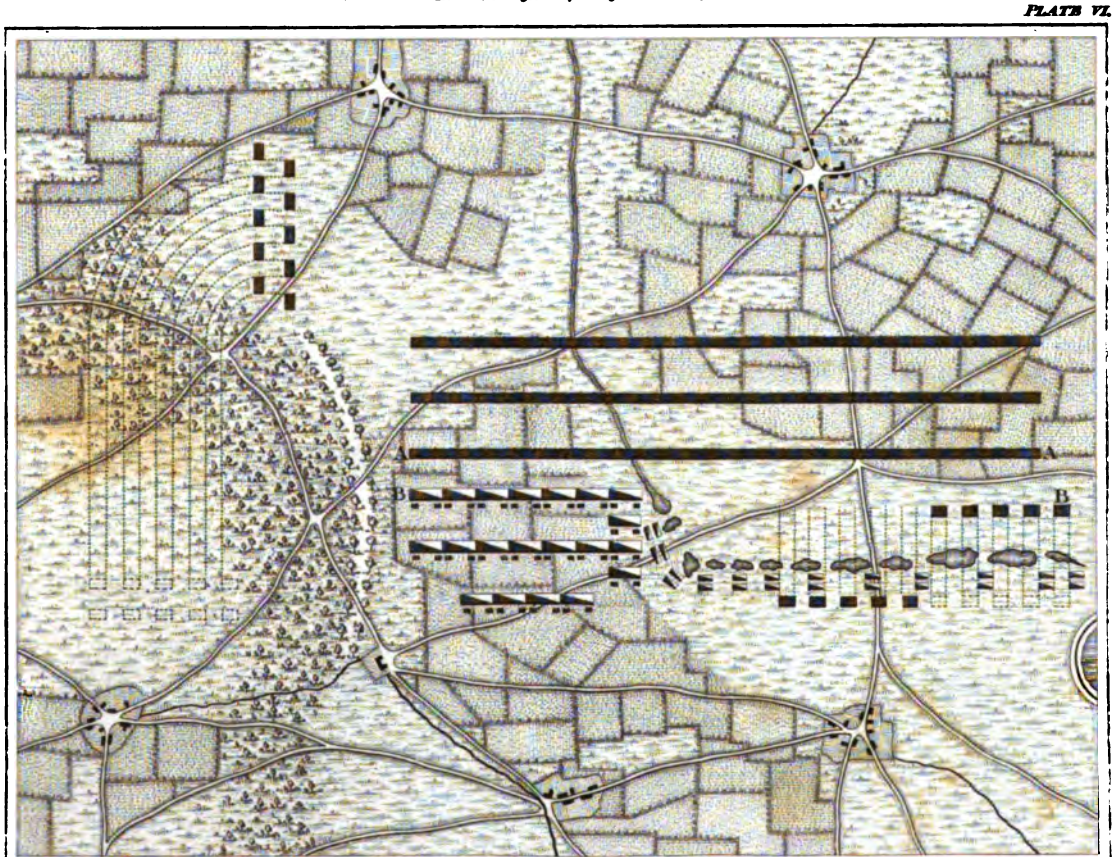
CASTRAMETATION.

PLATE V.



Toises
100 200 300 400 500 600 700

PLATE VI.



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Engraved by Wm. Lowry

CASTRAMETATION.

PLATE VII.

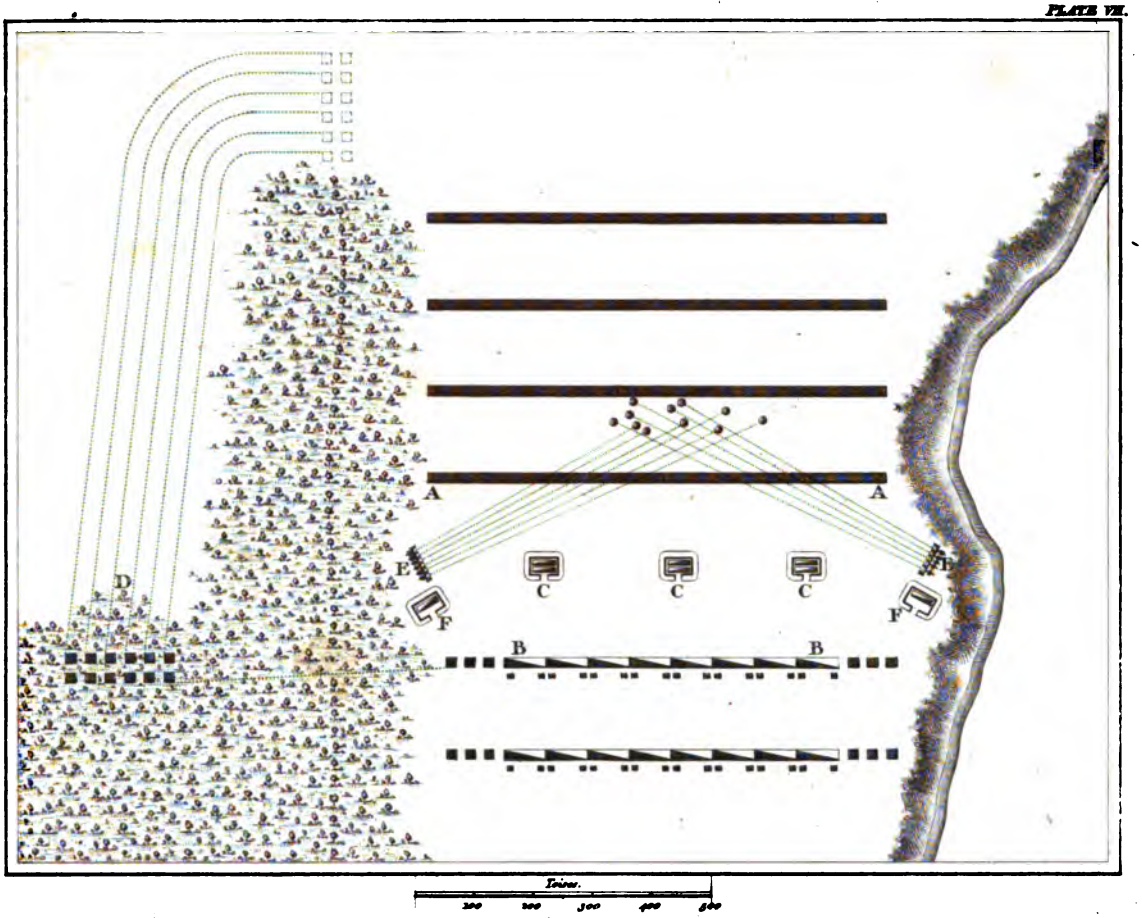
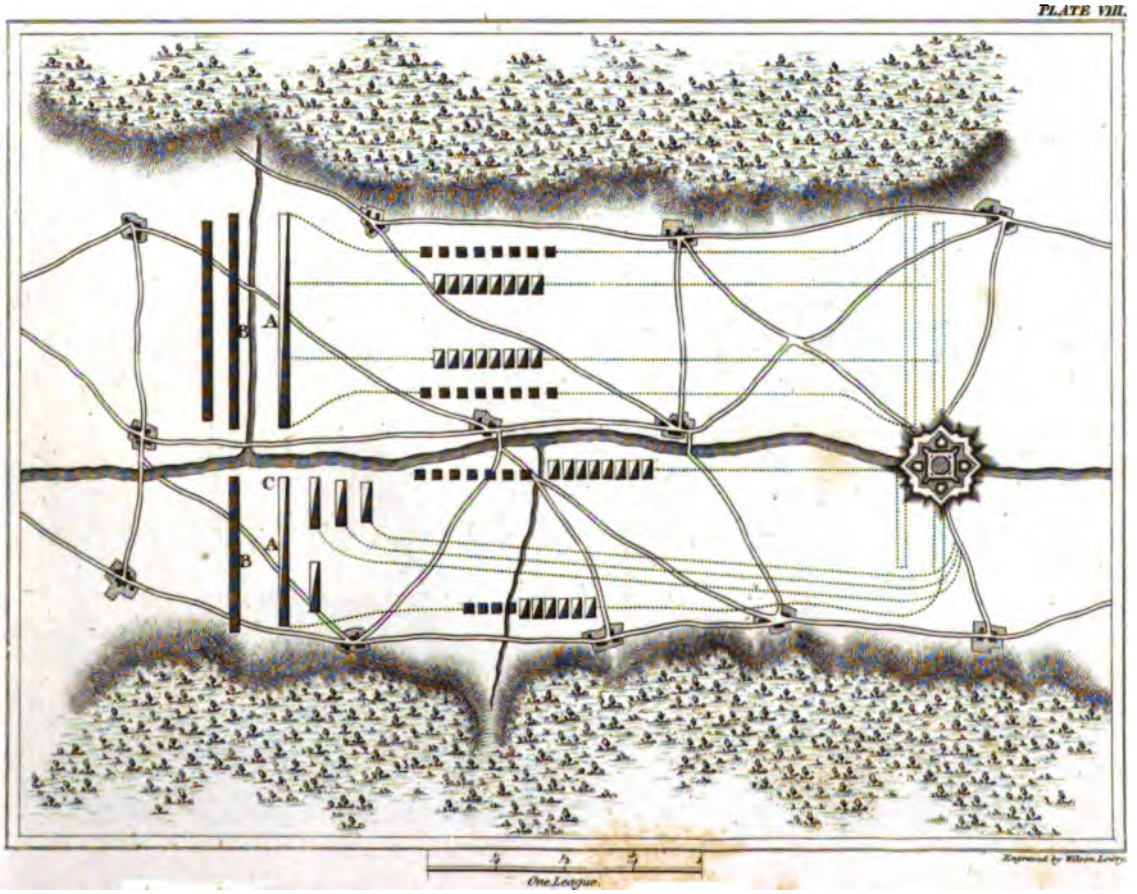


PLATE VIII.



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CASTRAMETATION.

PLATE IX.

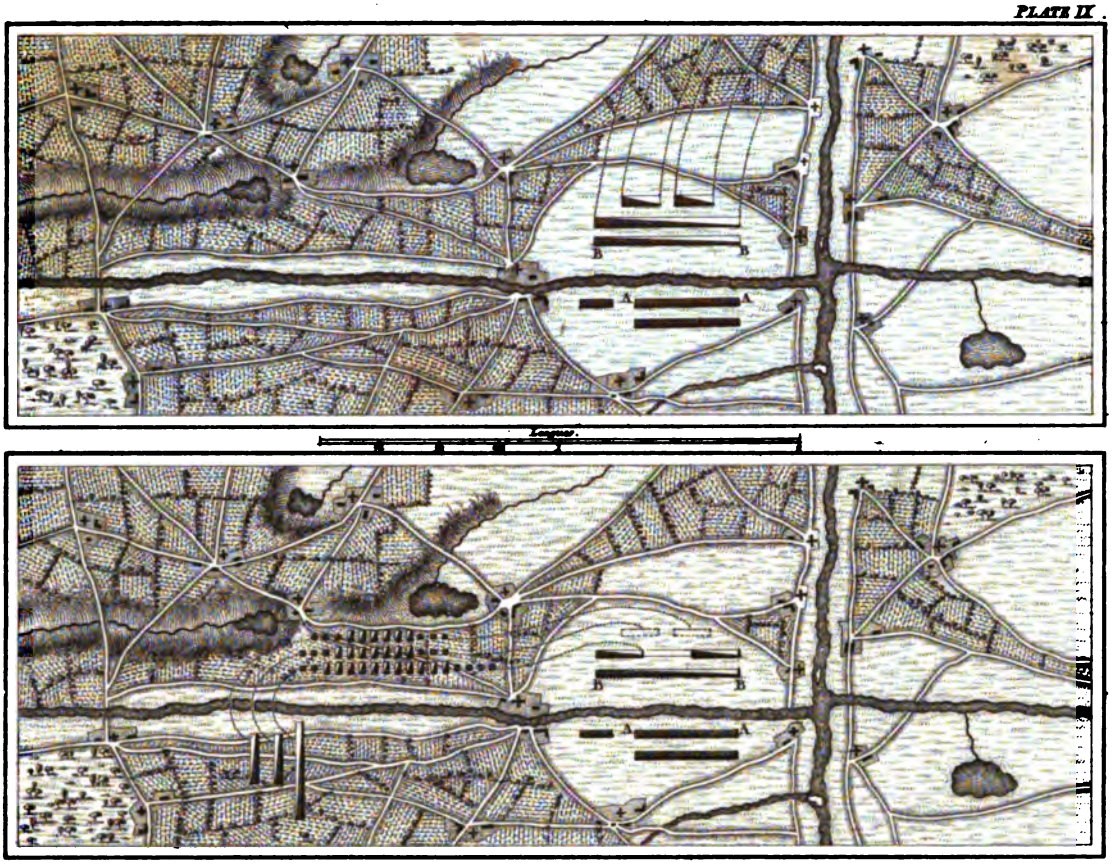

PLATE X.

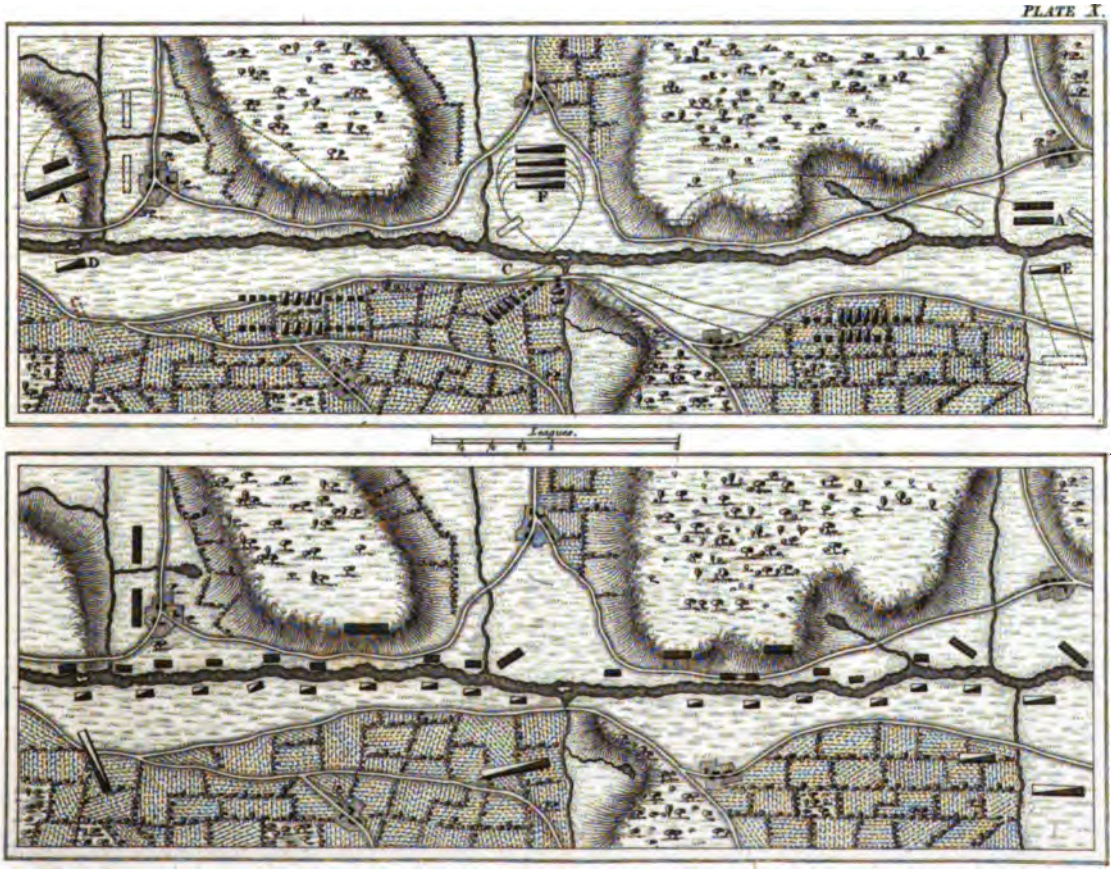

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PLATE XI.

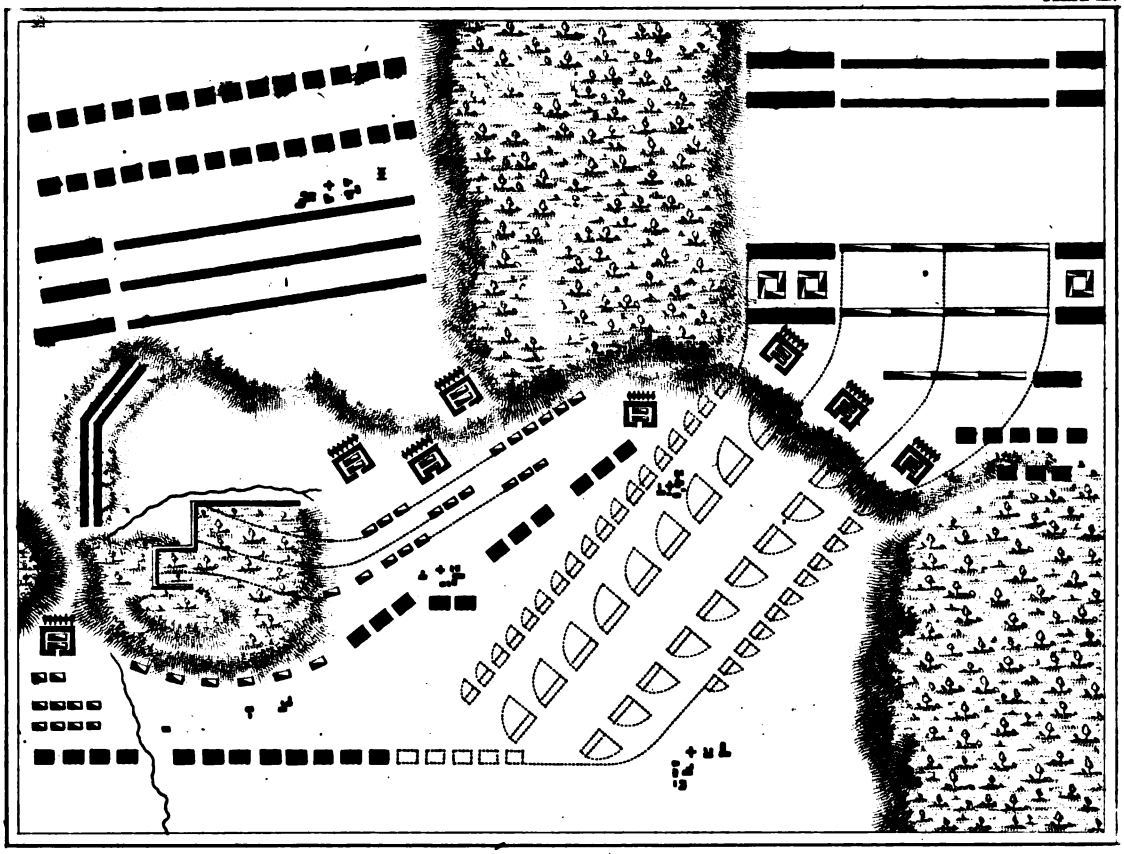
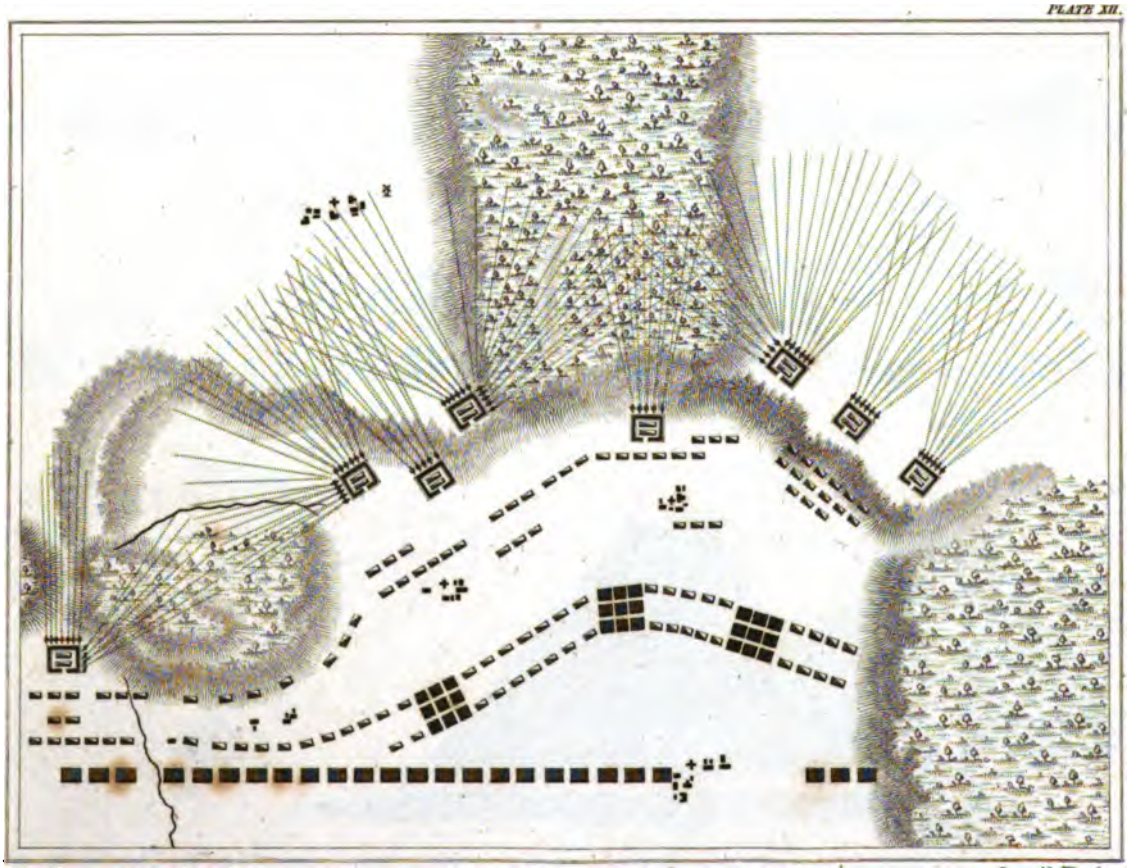


PLATE XII.



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Published as the Act directs, 1809, by Longman, Hurst, Rees, & Orme, Paternoster Row.

CANALS.

Fig. 1.
Level-cutting.

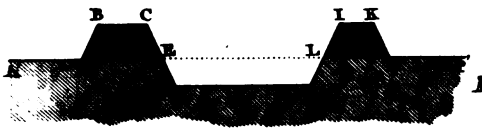


Fig. 2.
Side-lying Ground.

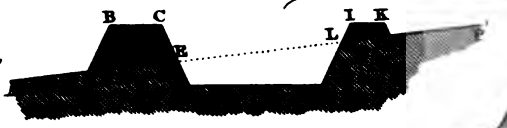


Fig. 3.

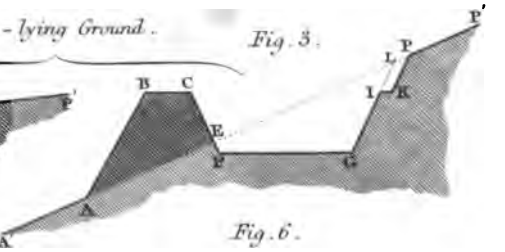


Fig. 4.
Embanking.

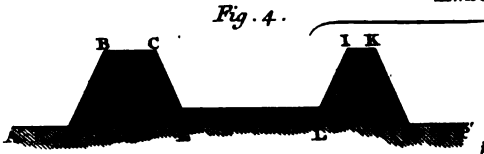


Fig. 5.

Fig. 6.
Deep-cutting.

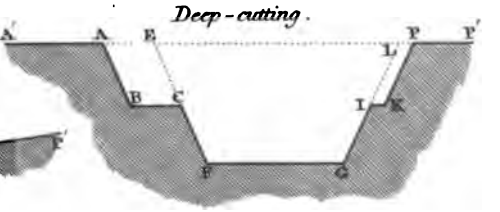


Fig. 7.

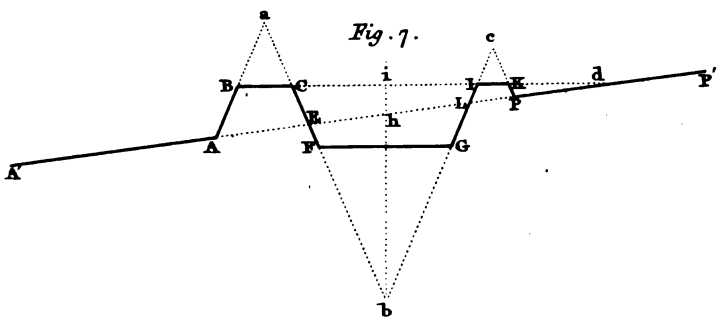


Fig. 8.

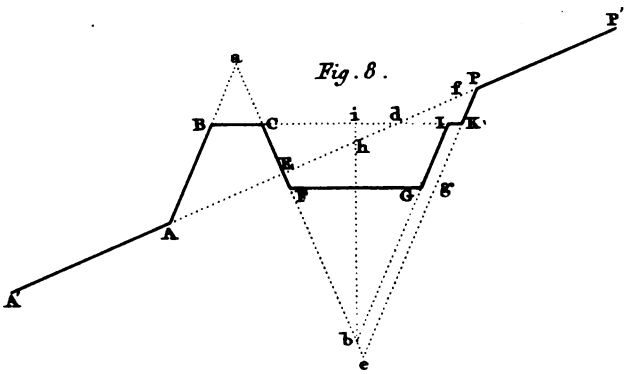


Fig. 9.

Fig. 10.

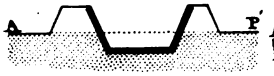
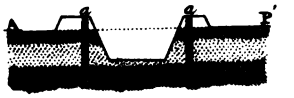


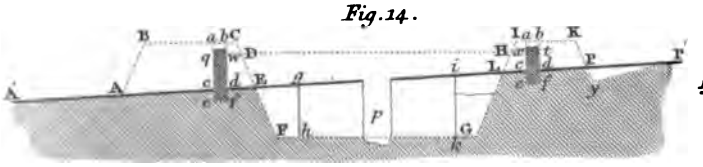
Fig. 11.

Fig. 12.

Fig. 13.



Puddling.
Fig. 14.



Lining.
Fig. 15.

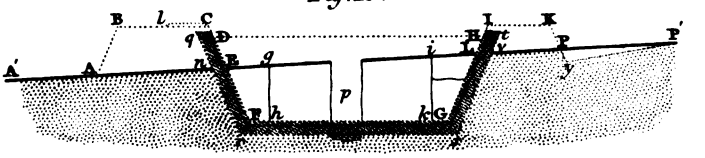


Fig. 16.
Reservoirs.

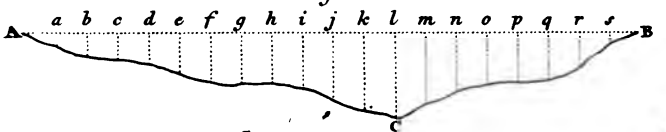


Fig. 17.

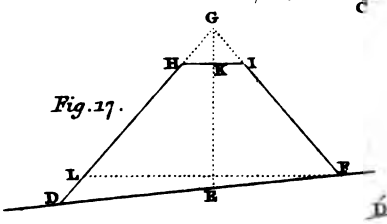
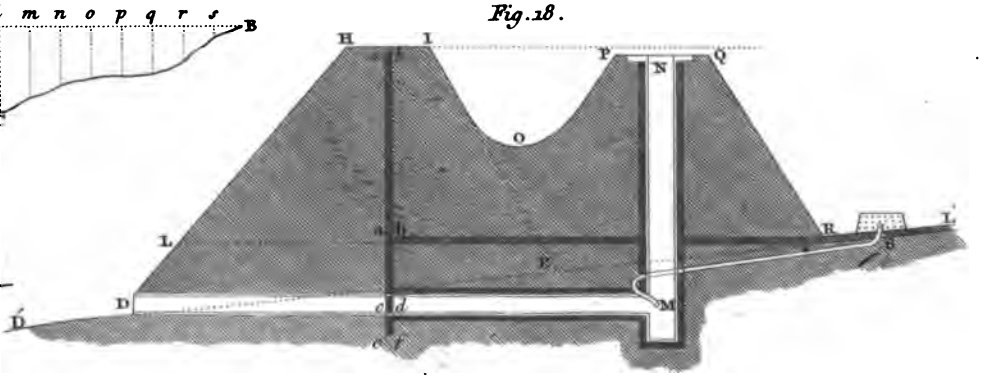


Fig. 18.



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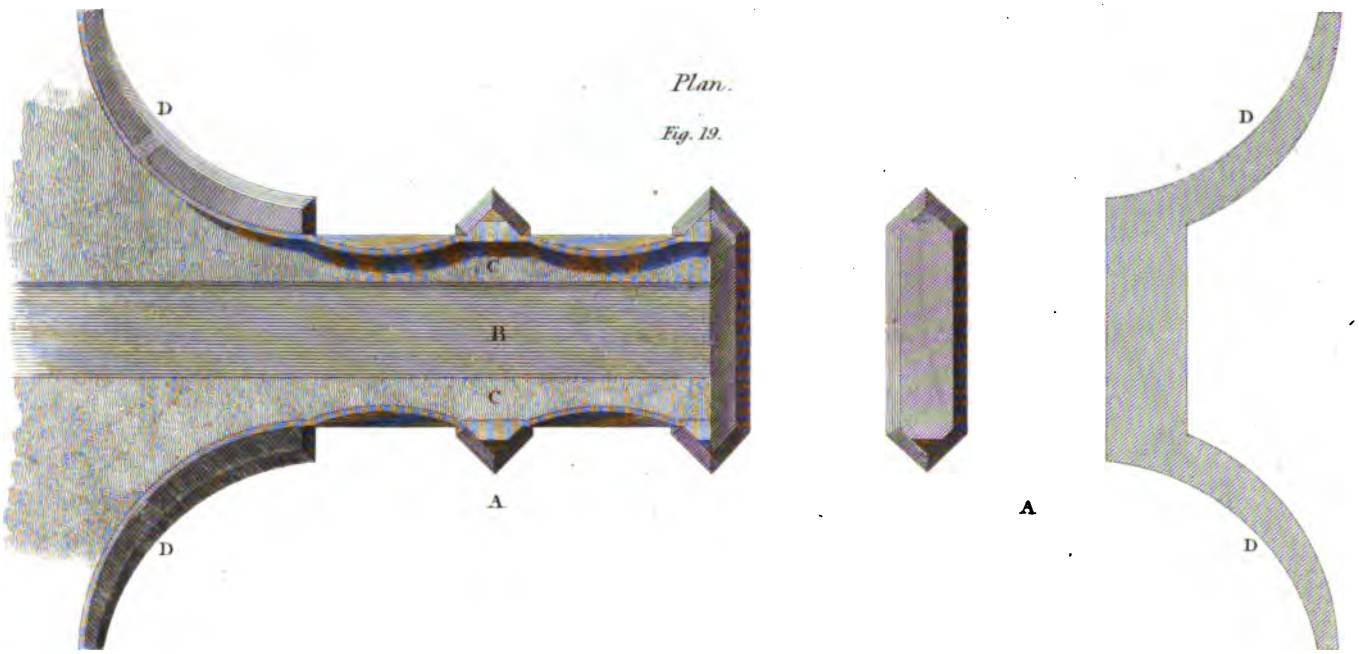
Aqueduct BRIDGE at Kelvin, on the Forth & Clyde Canal.

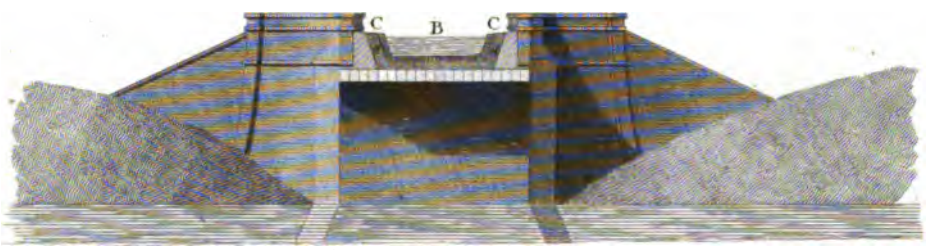
Plan.

Fig. 19.



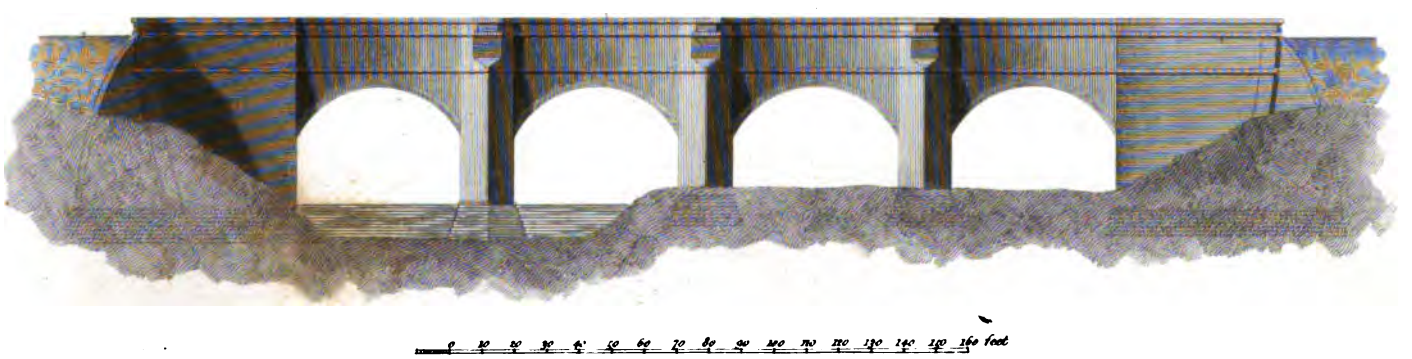
Transverse Section.

Fig. 20.



Elevation.

Fig. 21.



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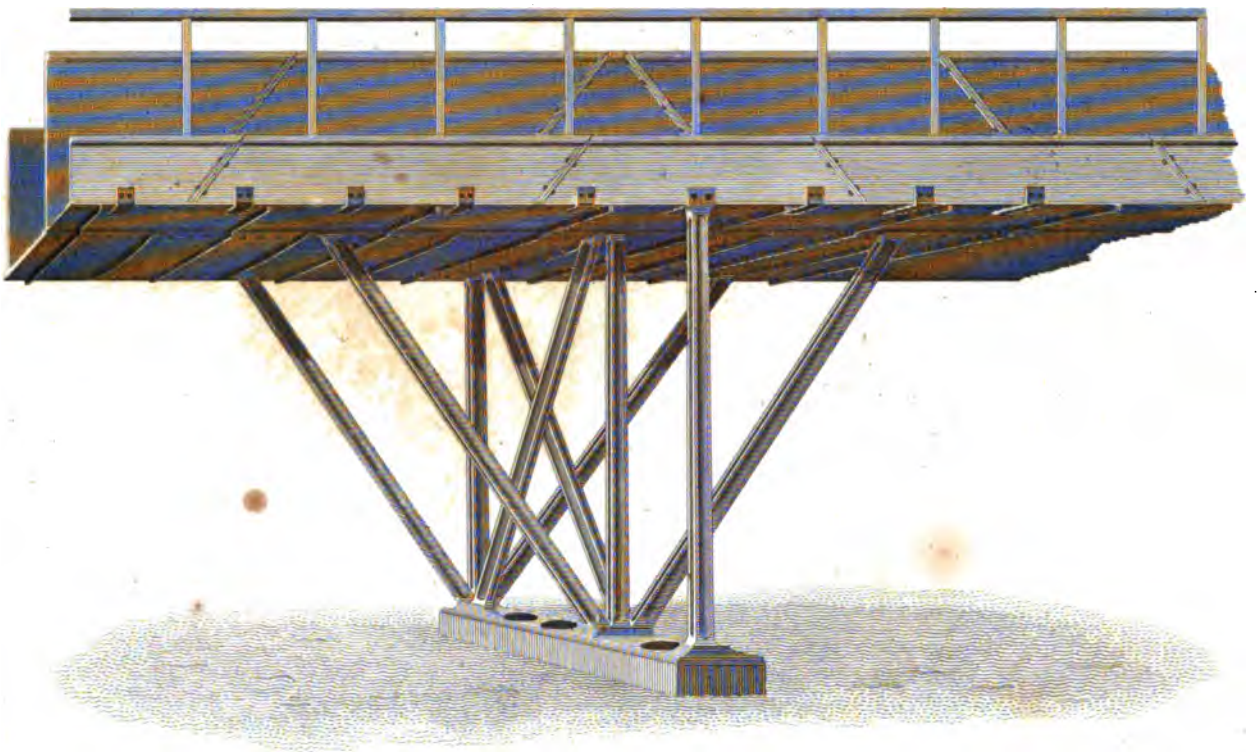
CAST IRON AQUEDUCTS.

Mr. Telford's, on the Shrewsbury Canal at Long.

Fig. 22.



by Mr. Fulton.

Fig. 23.

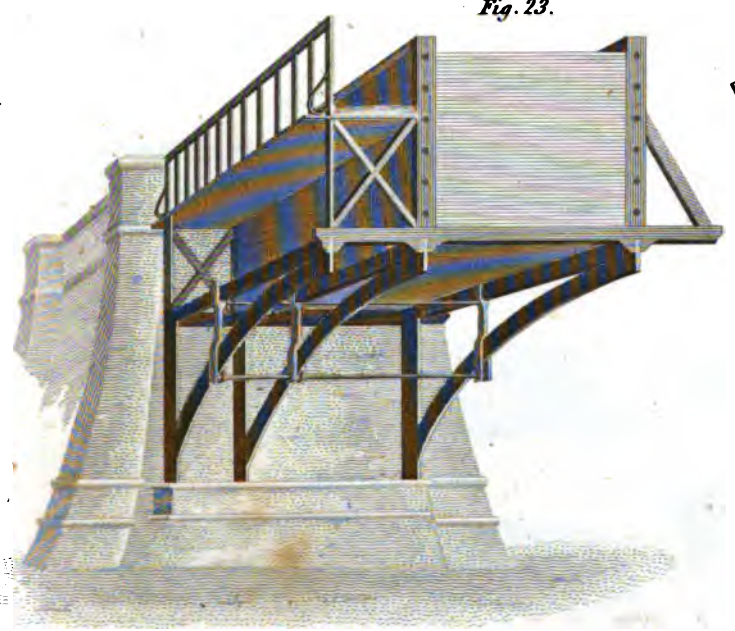


Fig. 24.

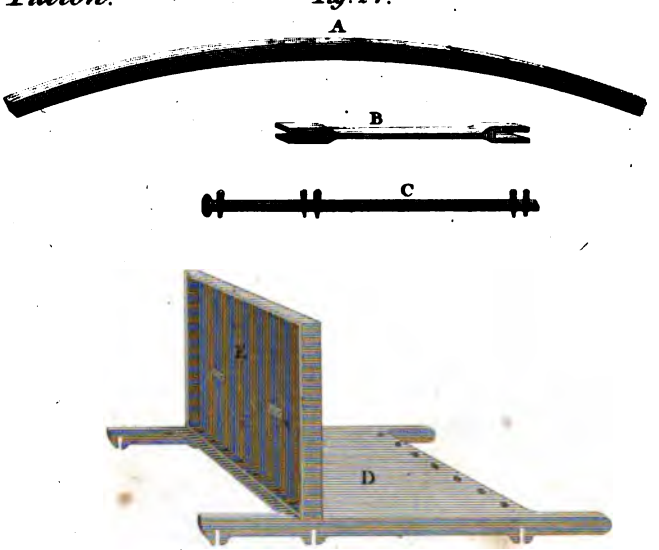


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Fig. 25. Embankment.

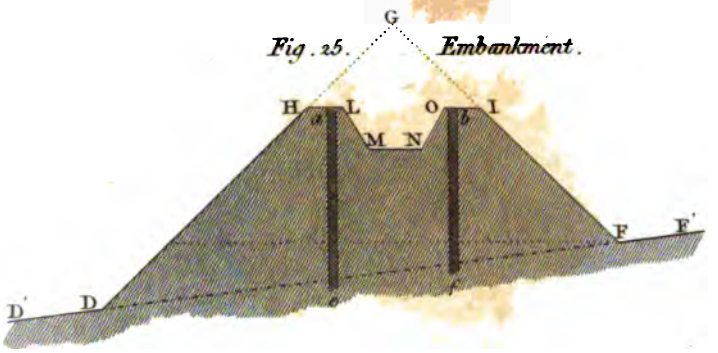


Fig. 26. Safety Gate.

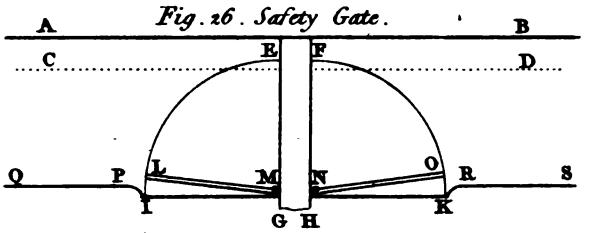


Fig. 27. Weir.

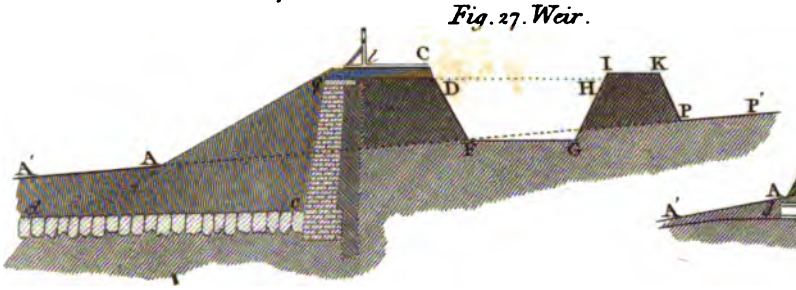


Fig. 28. Circular Weir.

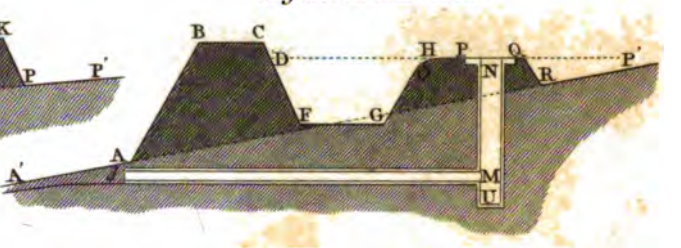
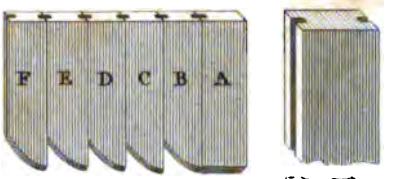


Fig. 30. Pile-planks.



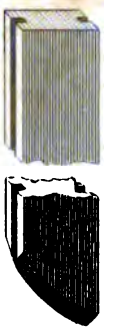
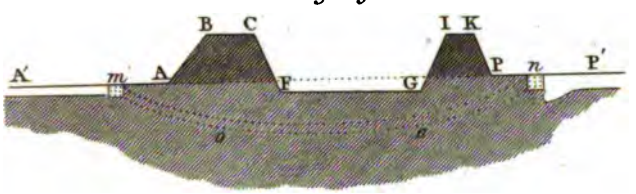


Fig. 29.



Iron Rail-ways.

Fig. 31.

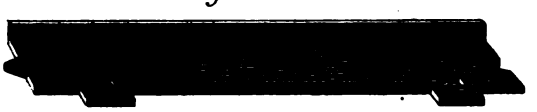


Fig. 34.

Fig. 32.

Fig. 33.

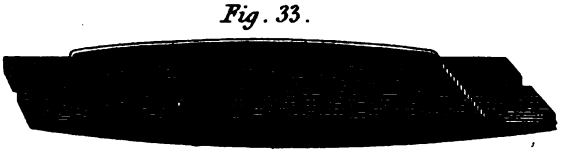
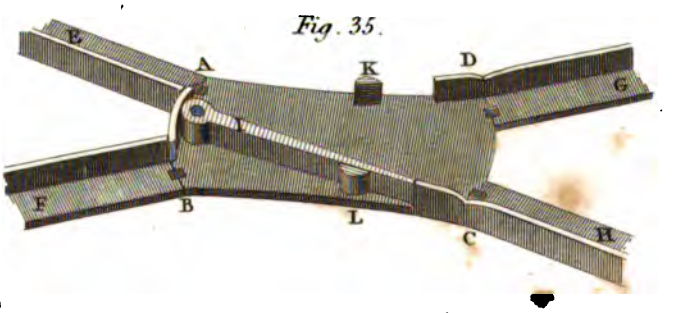


Fig. 35.



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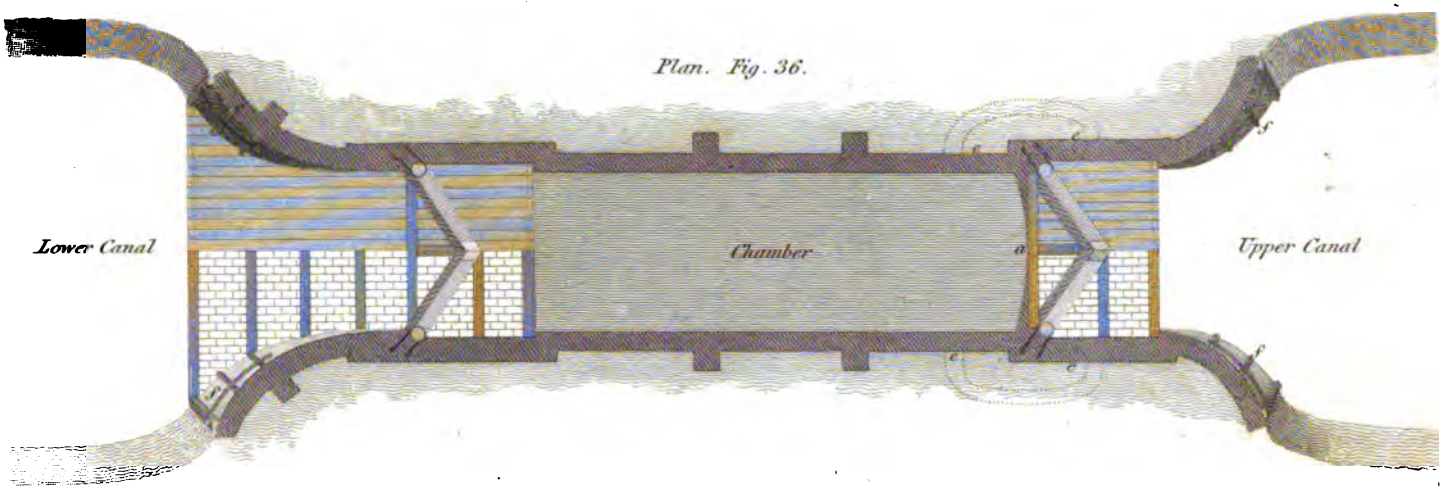
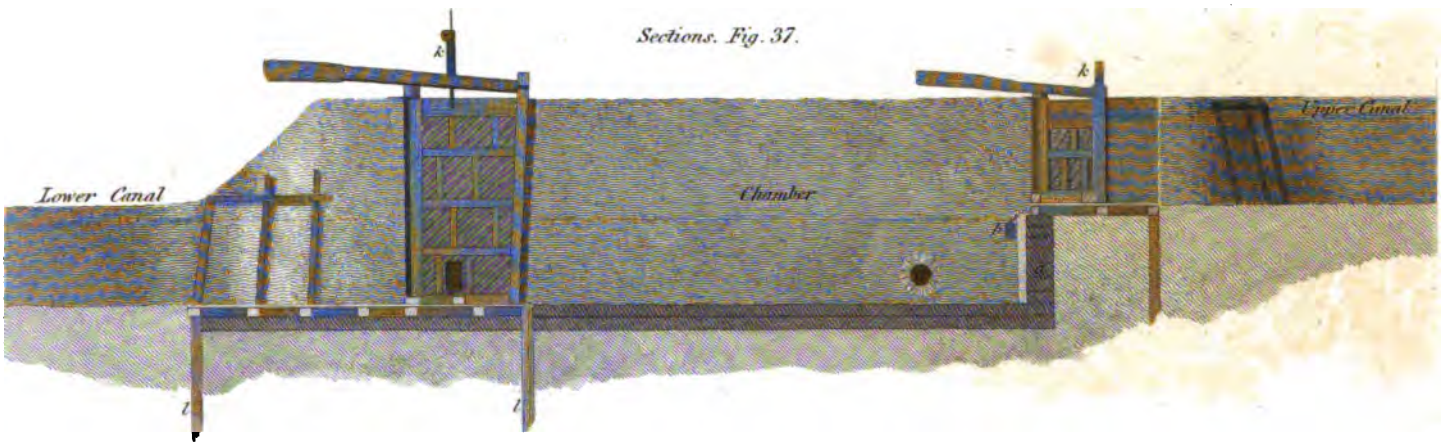
CANALS.

LOCKS.

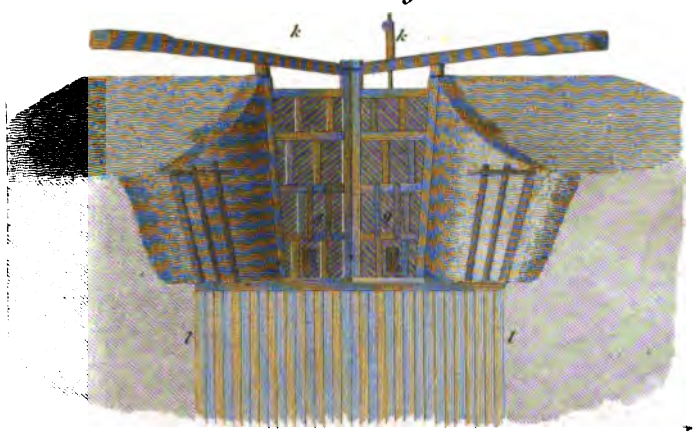
Plan. Fig. 36.



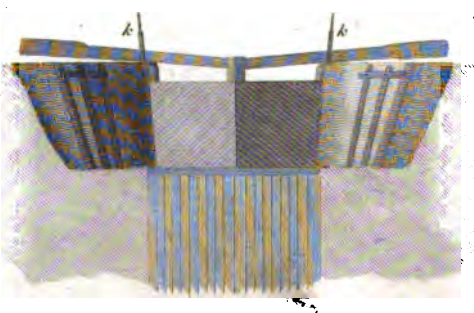
Sections. Fig. 37.



Lower Gates. Fig. 39.



Upper Gates. Fig. 38.



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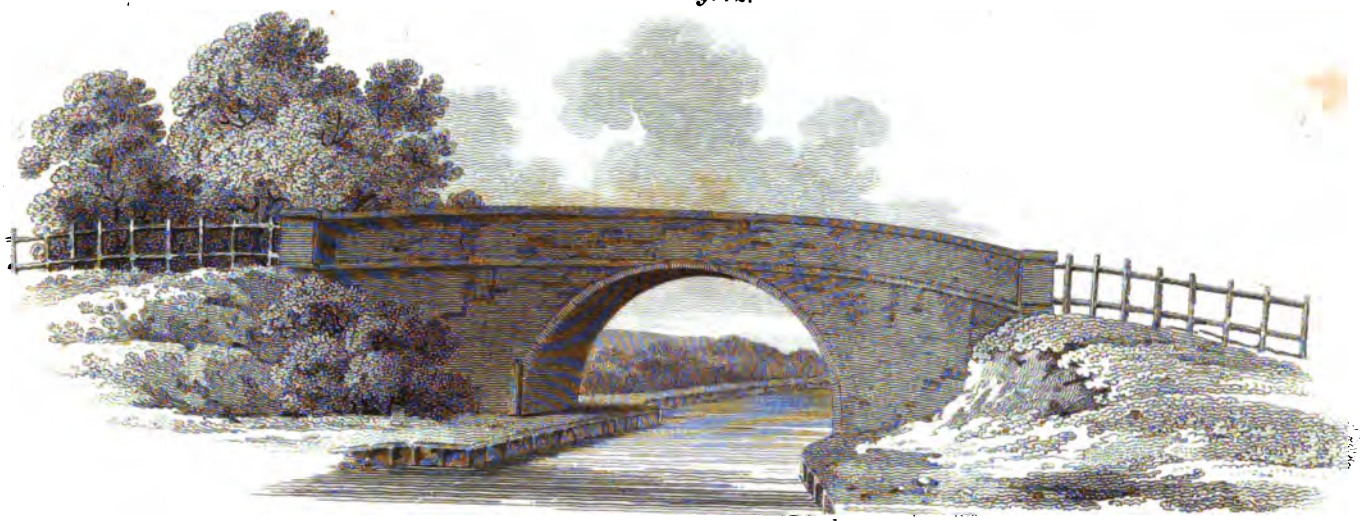
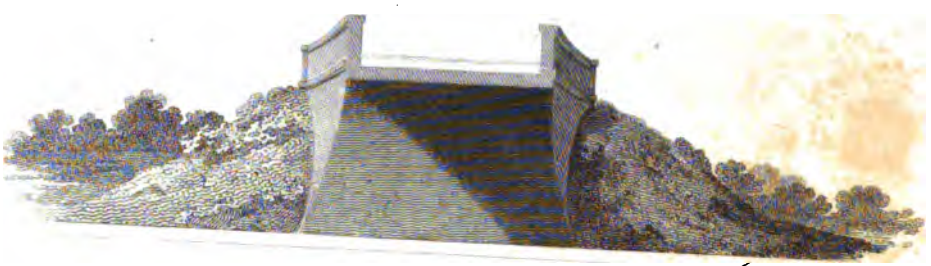
CANALS.

BRIDGES.

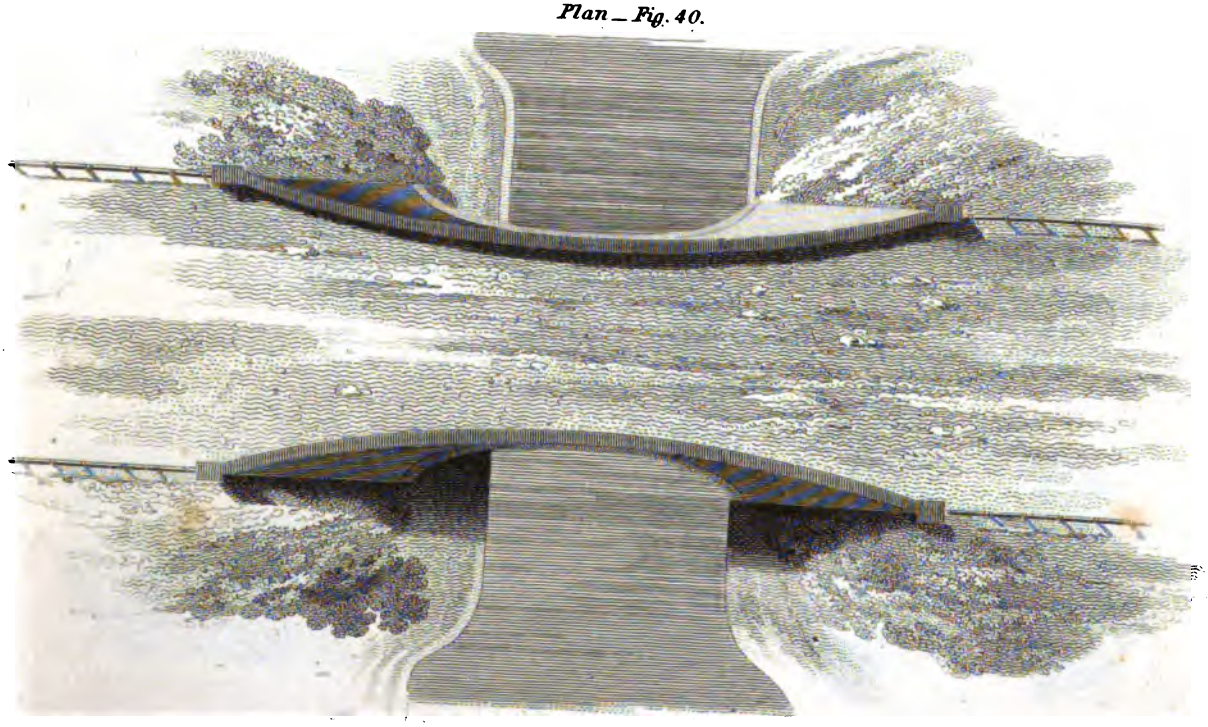
View_ Fig. 42.



Section_Fig. 41.



Plan_ Fig. 40.



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Swing-Bridge.

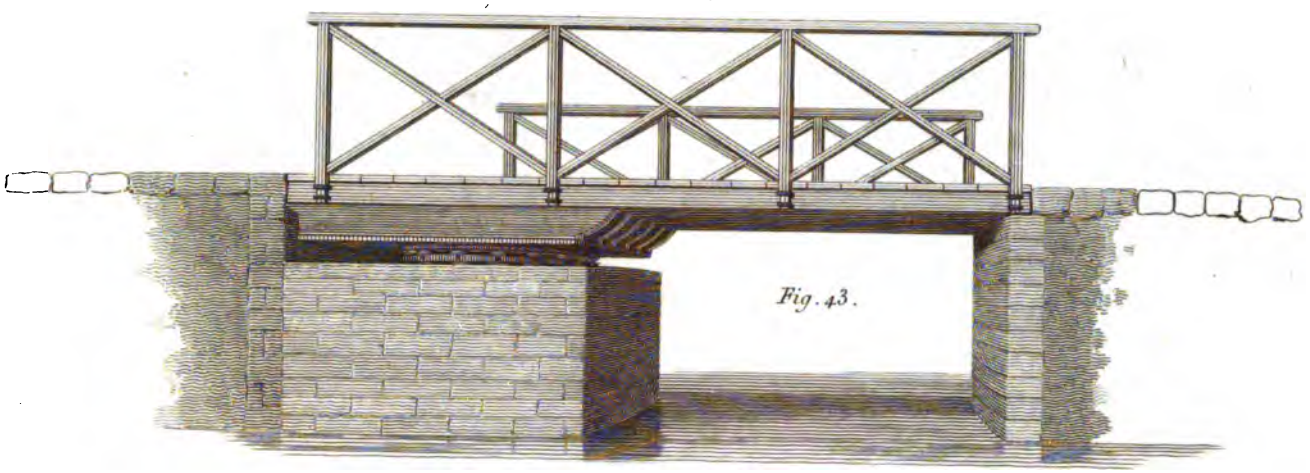


Fig. 43.

Fig. 44.

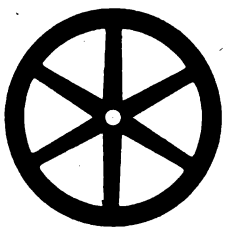


Fig. 45.

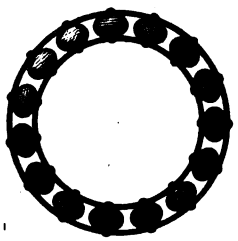


Fig. 46.

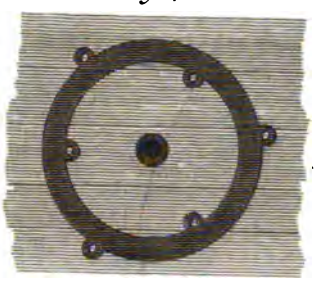
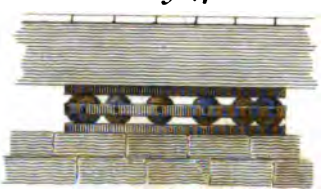


Fig. 47.



NAVIGATOR'S TOOLS &c.

Fig. 48. Barrow.

Fig. 49. Horsing-Block.

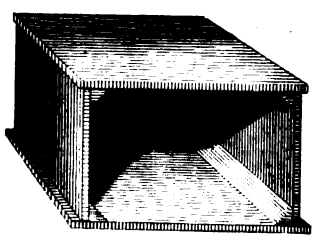


Fig. 50. Grafting Tool.

Fig. 51. Shovel.

Fig. 52 Scoop.

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CANDLE.

CANDLE MAKING.

Fig. 1.

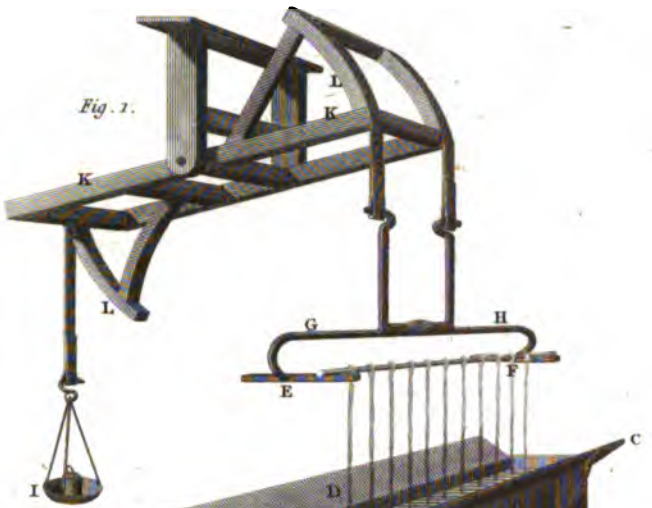

Fig. 4.

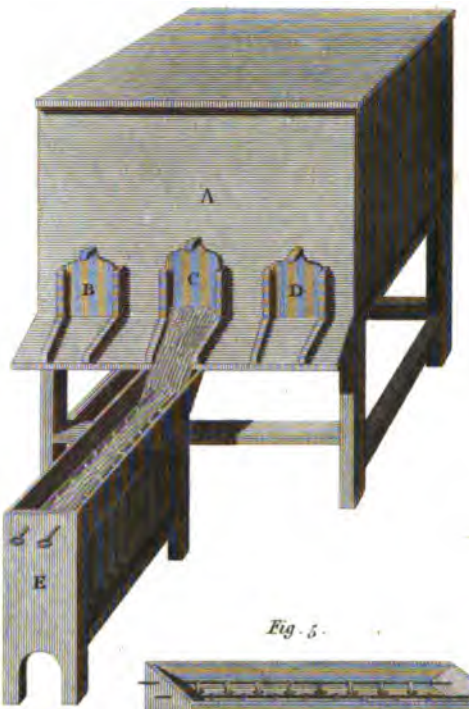

Fig. 2.

Fig. 3.

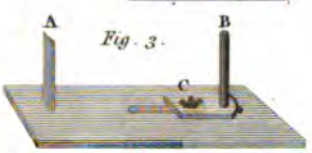

Fig. 5.

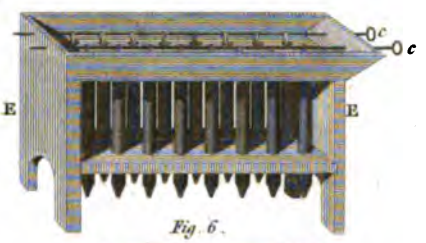

Fig. 6.

CANDLESTICKS.

Fig. 7.

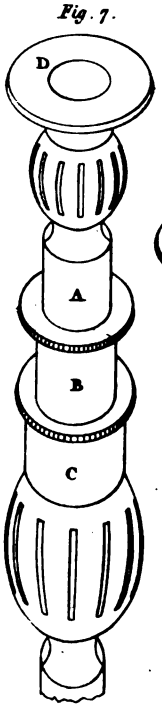

Fig. 8.

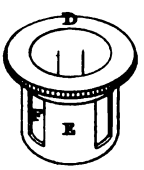

Fig. 9.

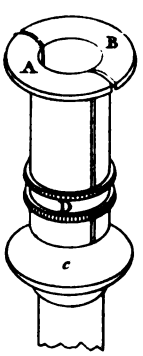

Fig. 10.

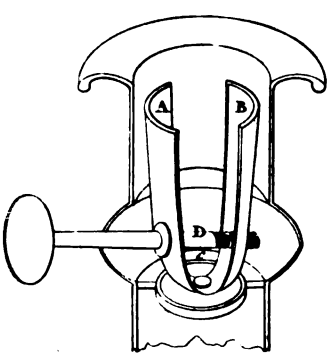

Fig. 11.

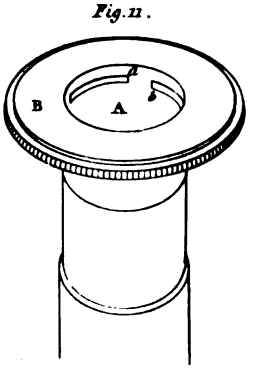

Fig. 12.

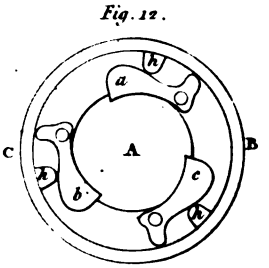

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Fig. 1.

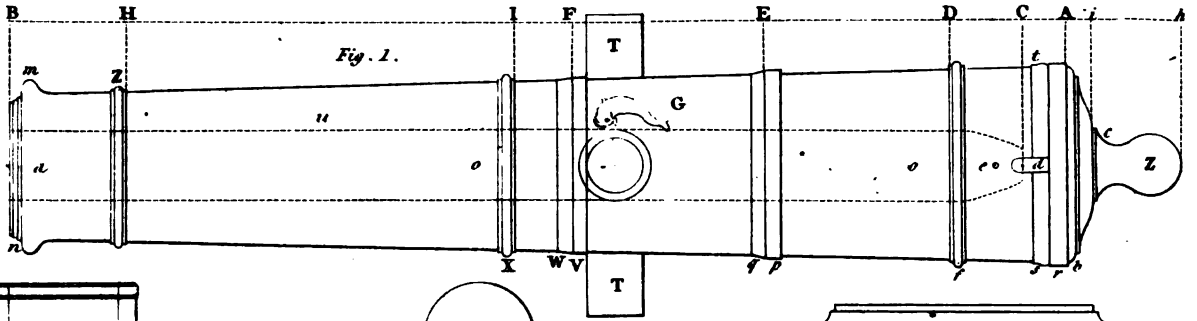


Fig. 12.

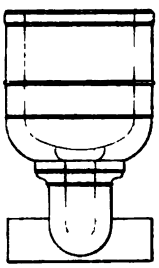


Fig. 2.

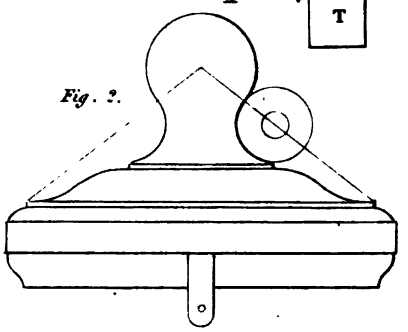


Fig. 3.

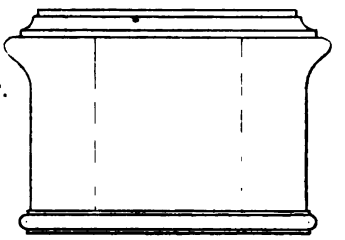
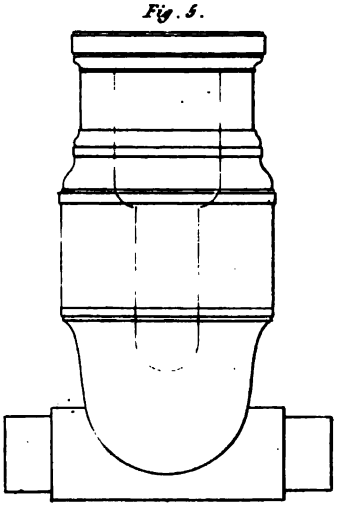


Fig. 5.



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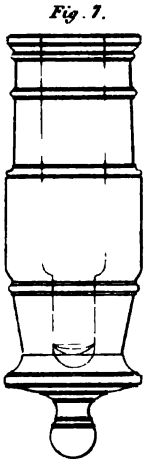


Fig. 6.

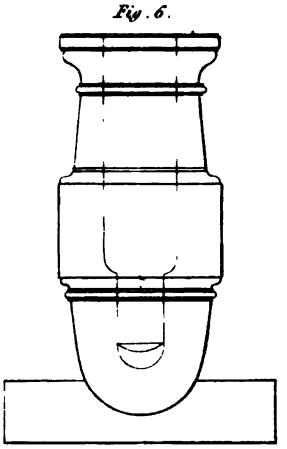


Fig. 4.

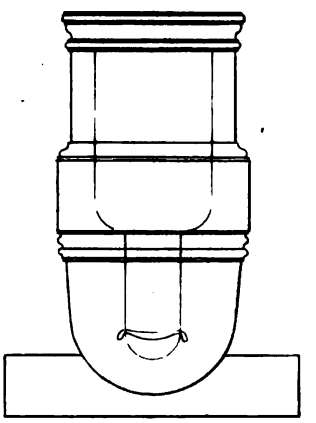


Fig. 10.

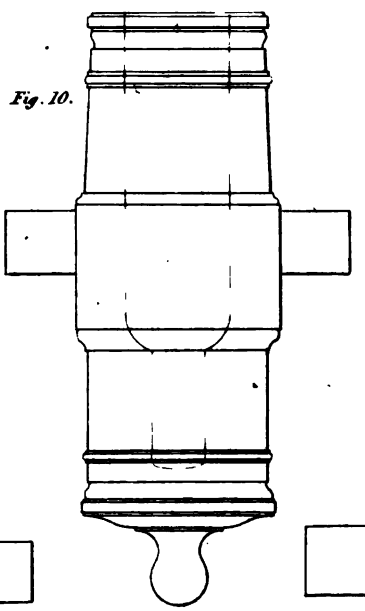
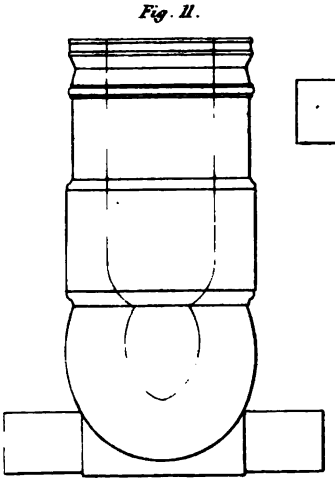


Fig. 11.



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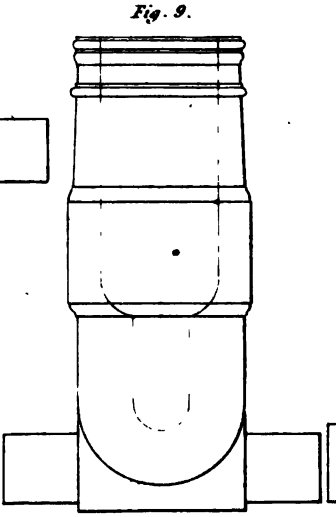

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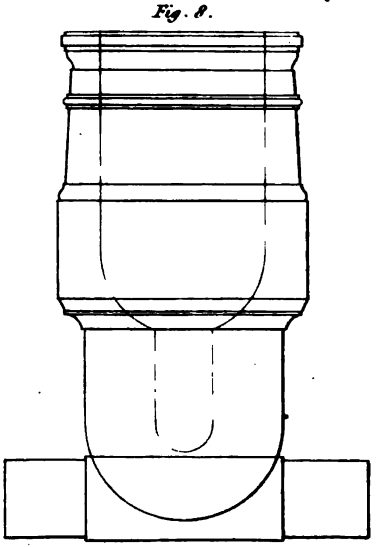

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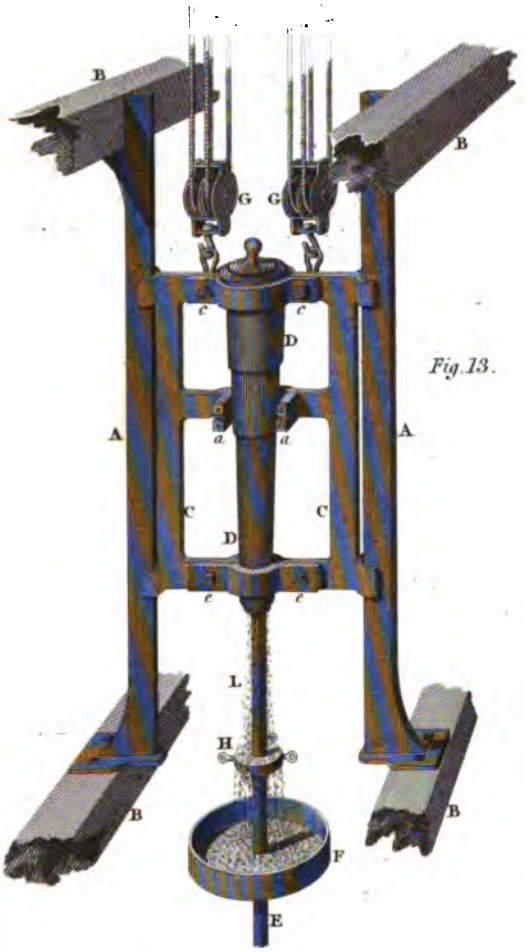
CANNON.

BORING.



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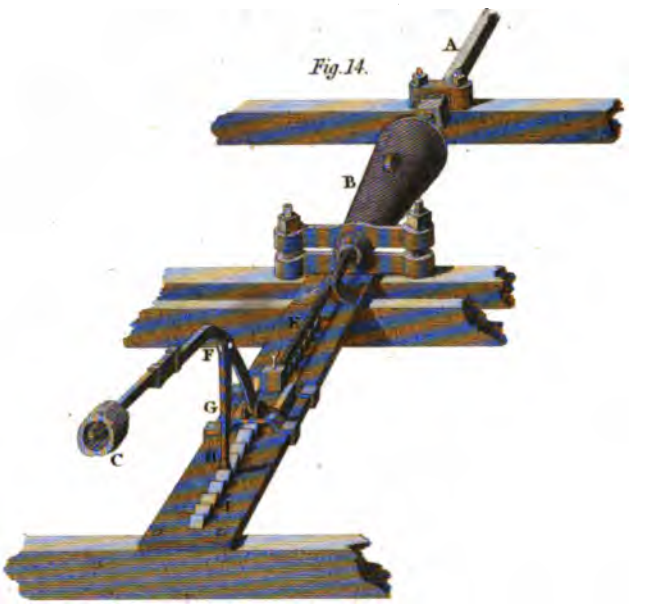

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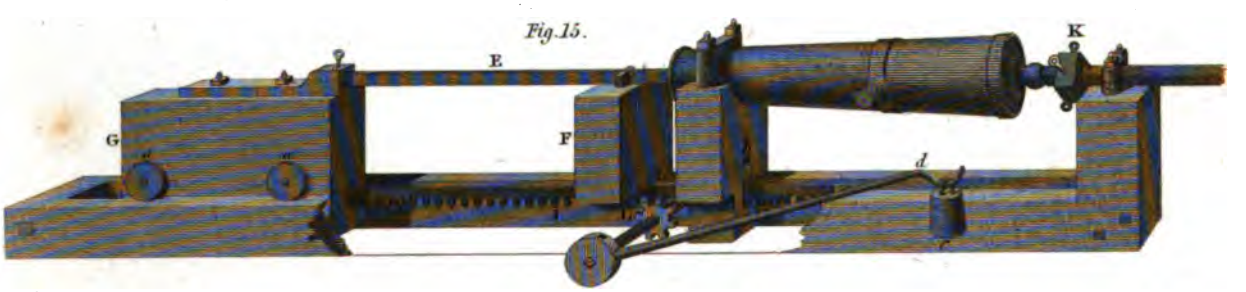

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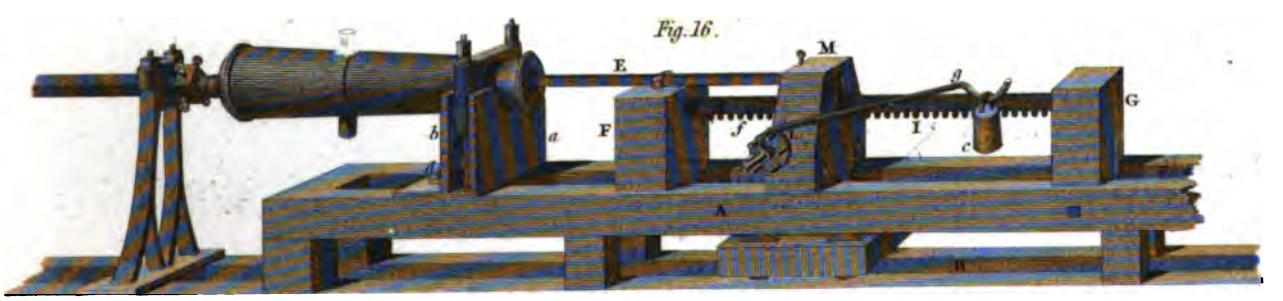

Fig. 16.

rey Junr. delin.

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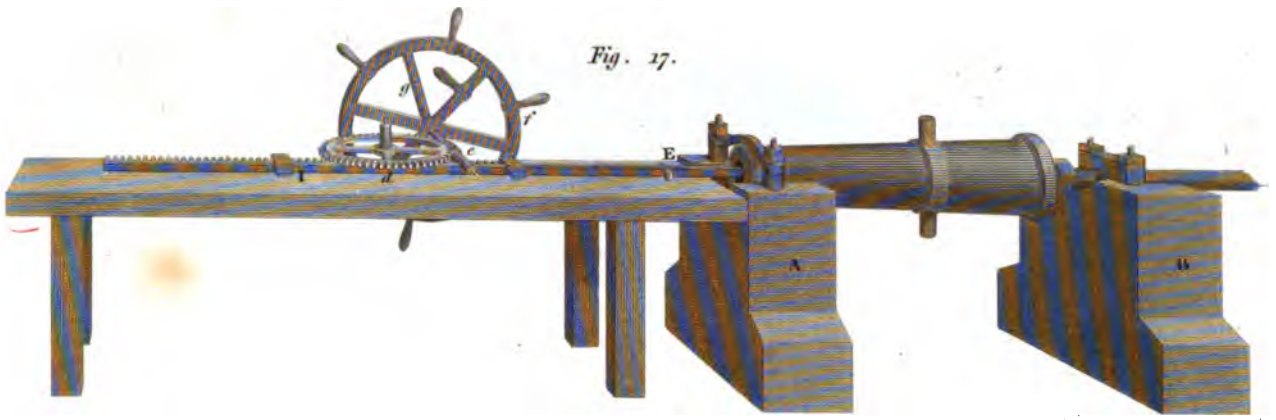
CANNON.

BORING, &c.

Fig. 17.



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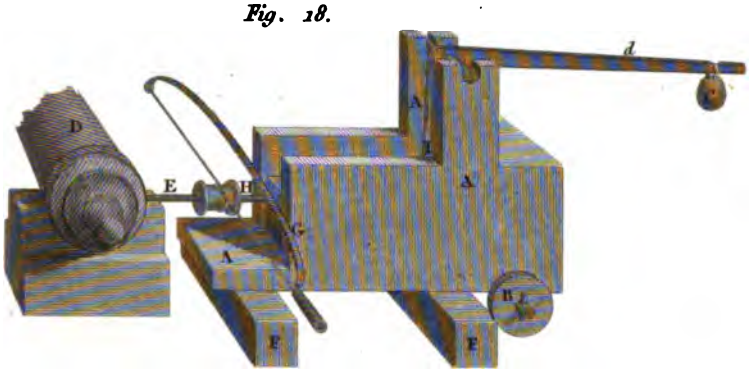

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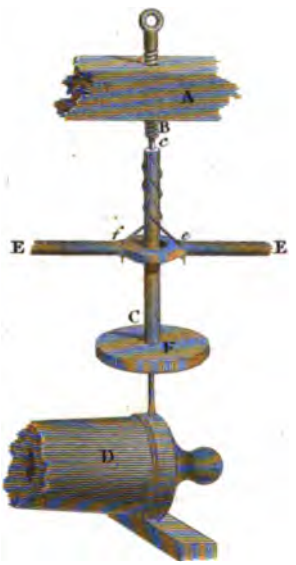

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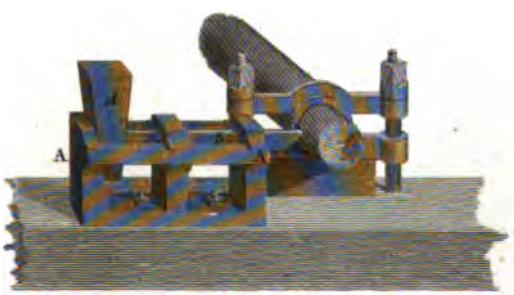

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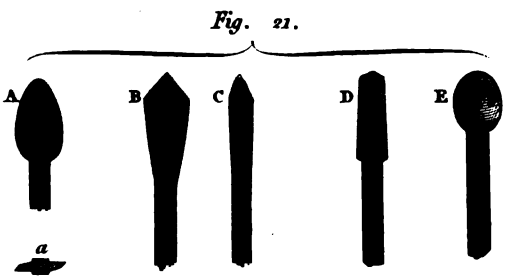

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CANTEENS.

MANUFACTURE OF

by M.r Geo. Smart.

Fig. 1. A Canteen.

Fig. 2. Cross cutting Saw.

Fig. 3.

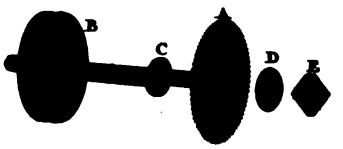

Fig. 4. Tenanting or rebating Saws.

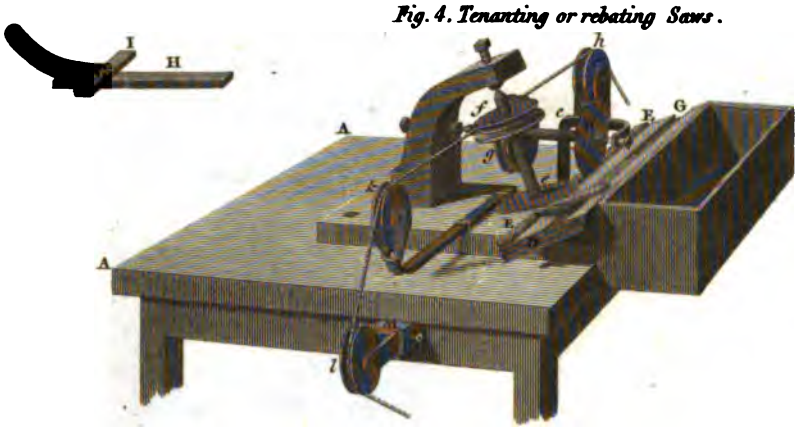

Fig. 5.

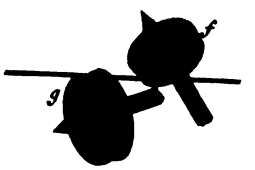

Fig. 6. Bung stave.

Fig. 8. Center bit.

Fig. 7. boring Machine.

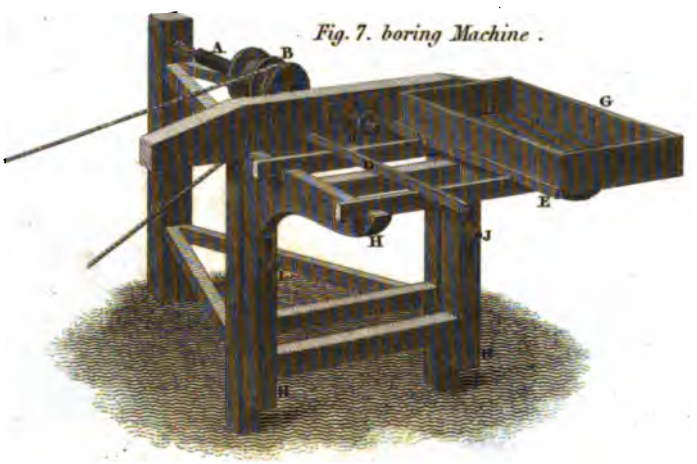

Fig. 9. Slider.

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Fig.11.
Screw Hoop

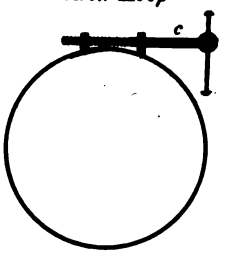


Fig.12.
Truss Hoop

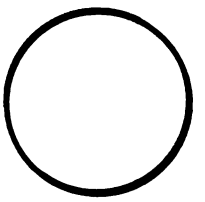


Fig.13.

Fig.10.

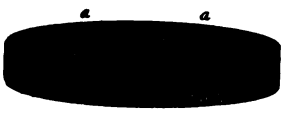


Fig.15. turning the head.

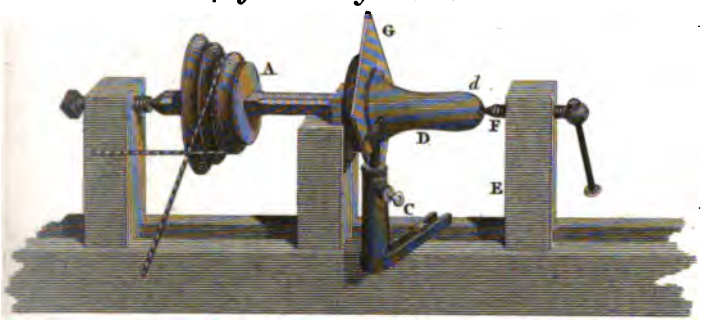


Fig.14. turning the chime.

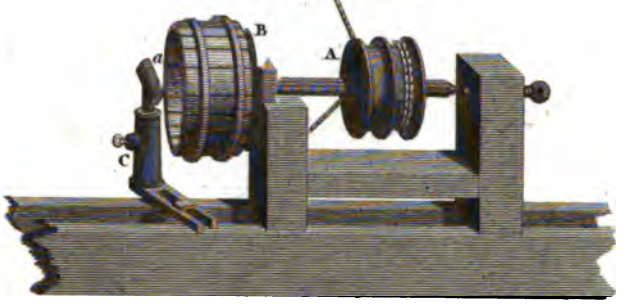
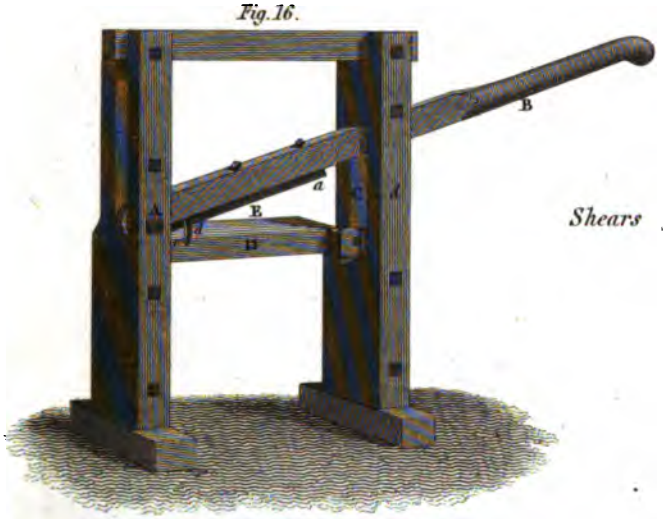


Fig.16.



Shears

Fig.17.

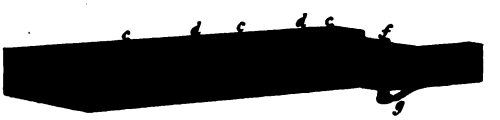


Fig.18. punching the Hoops.

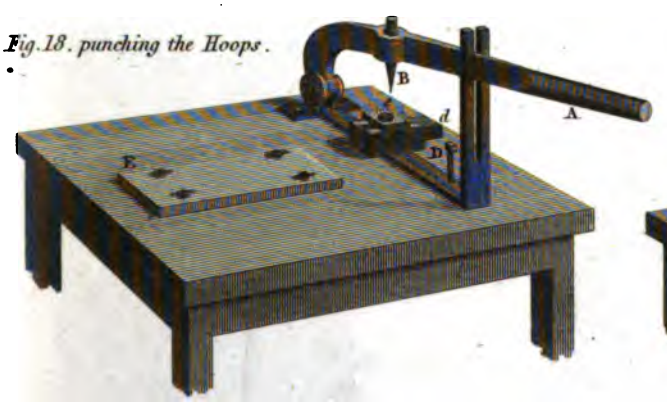


Fig.19. rounding the ends of the Hoops

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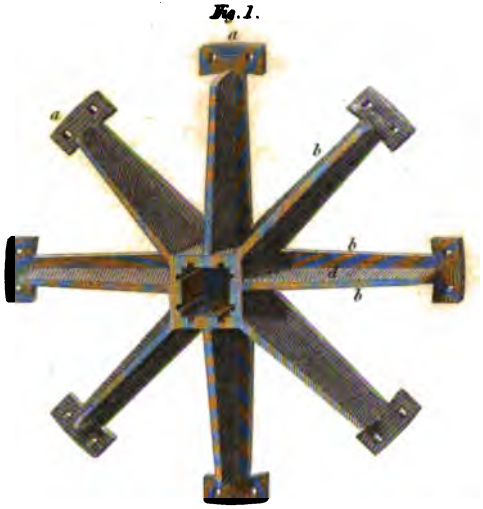
Fig. 1.



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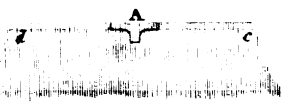


Fig. 3.

Fig. 4.

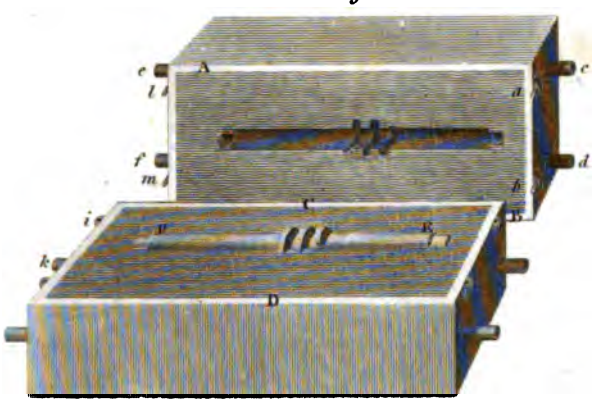
Fig. 5.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 6.



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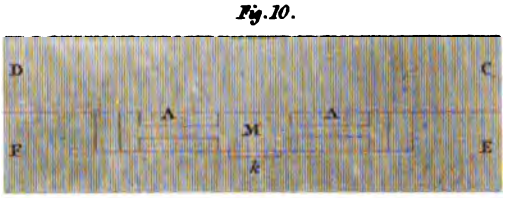

Fig. 11.

Fig. 12.

Fig. 13.

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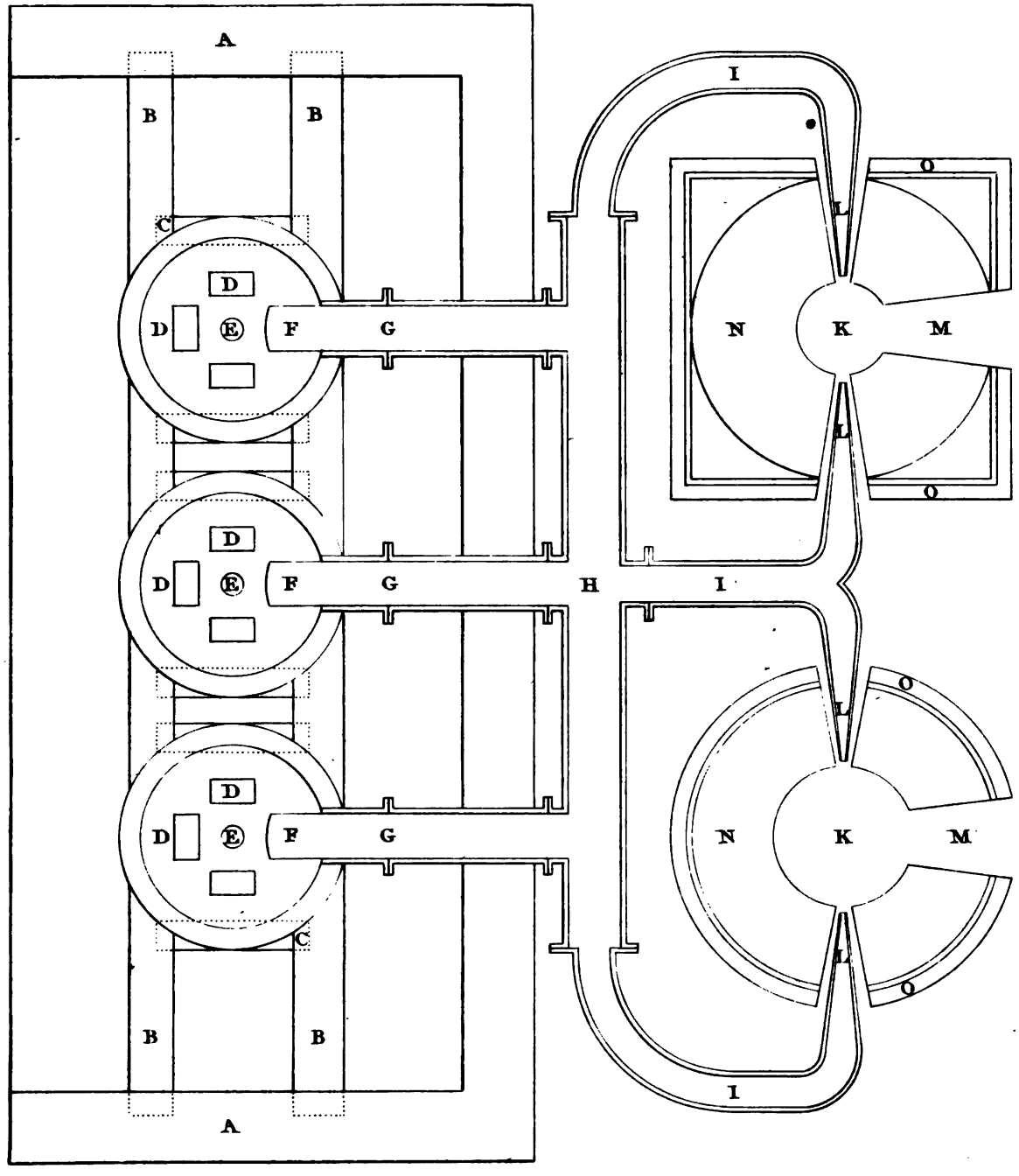
Fig. 1.

SECTION OF CUPALO FURNACE.



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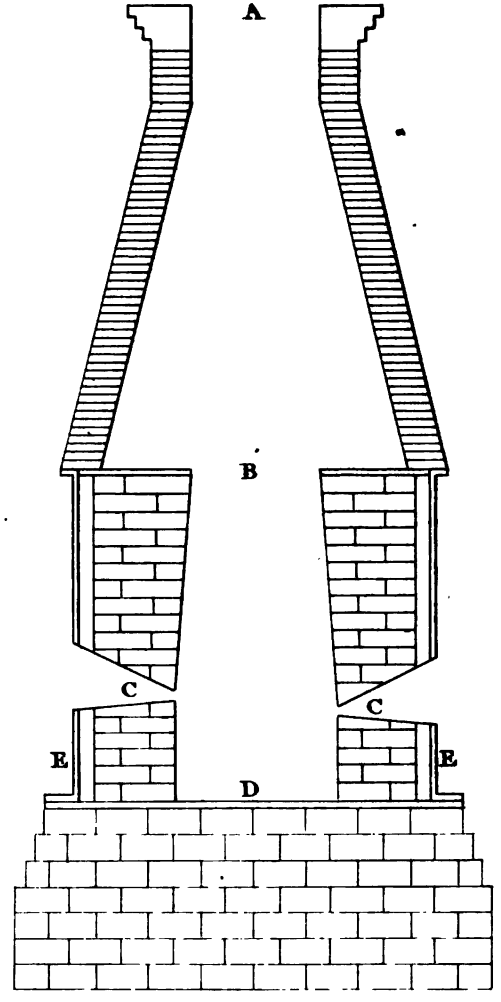

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CHEMISTRY.

STILL

Fig. 1.

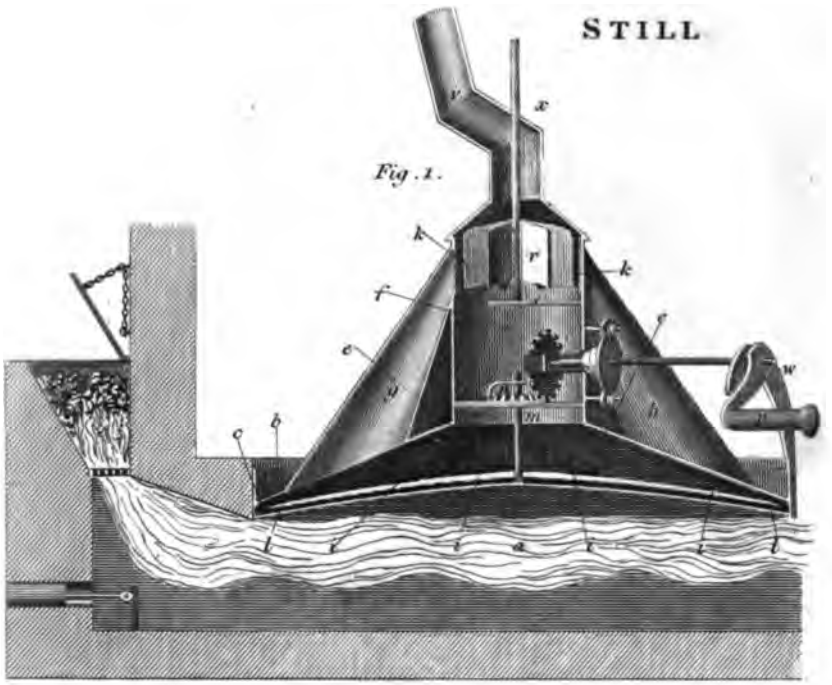
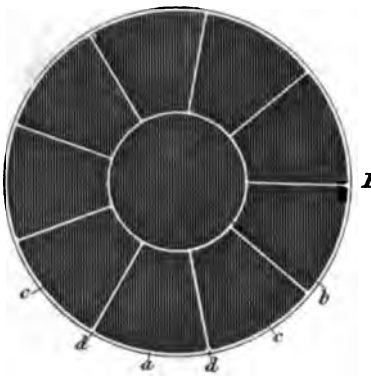


Fig. 2.



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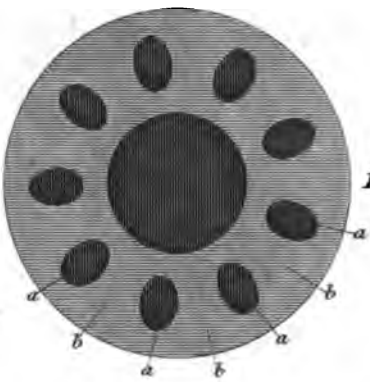
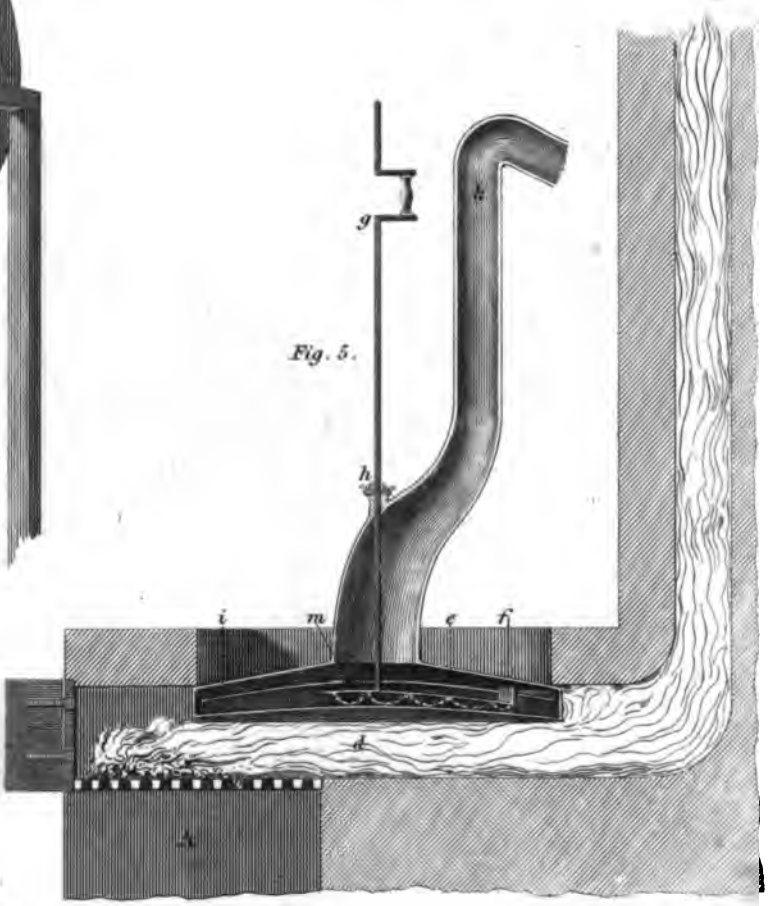


Fig. 4.

Fig. 5.



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CHEMISTRY.

IRON SMELTING FURNACE

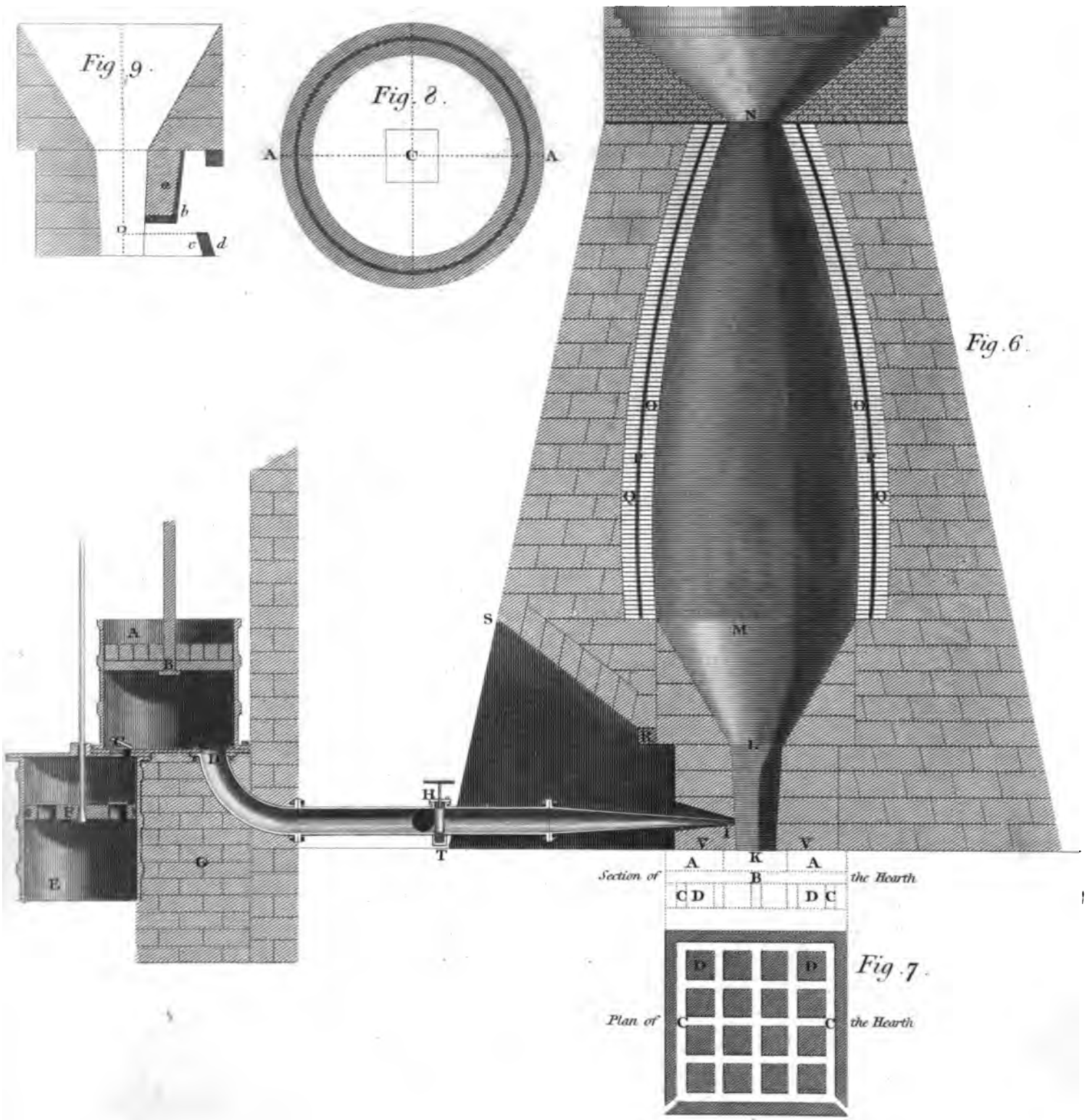

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Fig. 10.

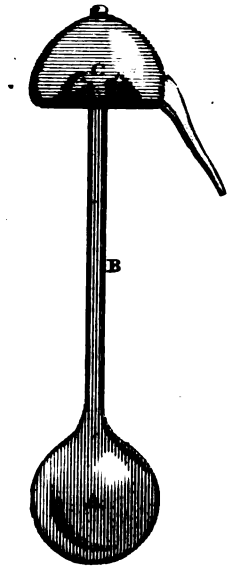


Fig. 11.

ALEMBIC.

Fig. 12.

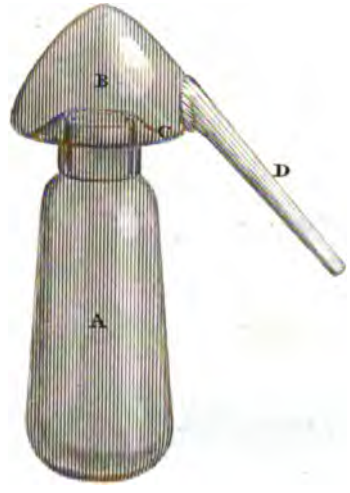


Fig. 13.

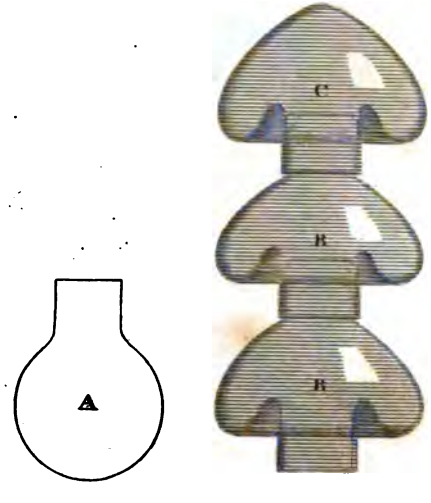
ALCOHOL.

Fig. 10.

Fig. 13.

ALUDEL.

Fig. 14.



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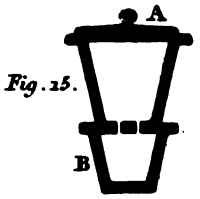
CHEMISTRY.

FURNACES FOR THE REDUCTION OF ANTIMONY.



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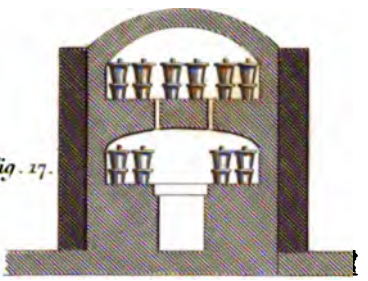

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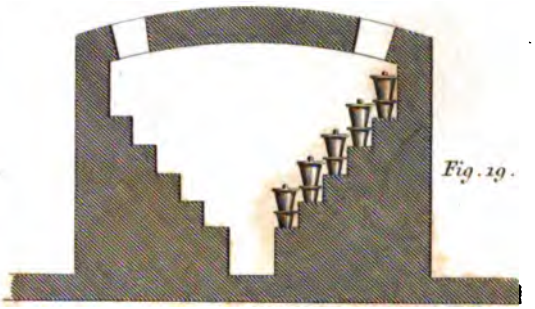

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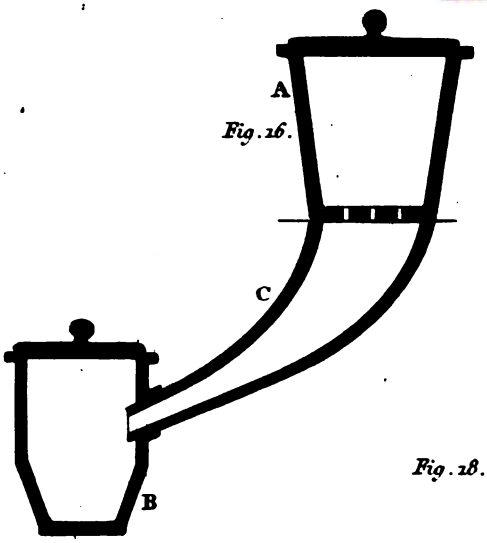

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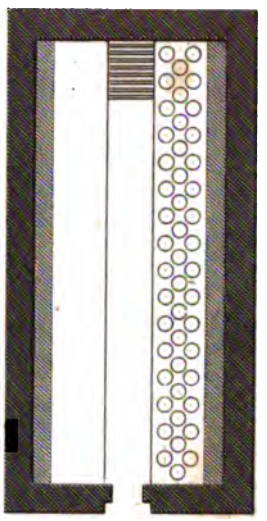

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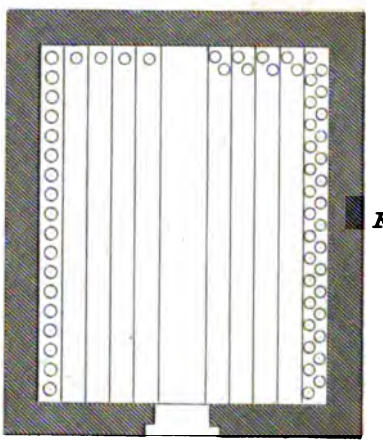

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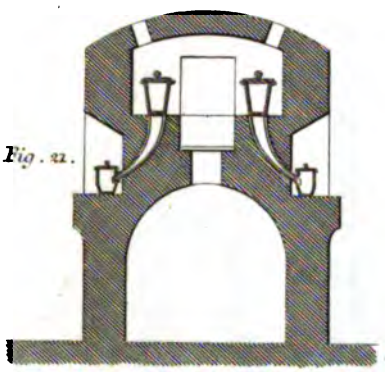

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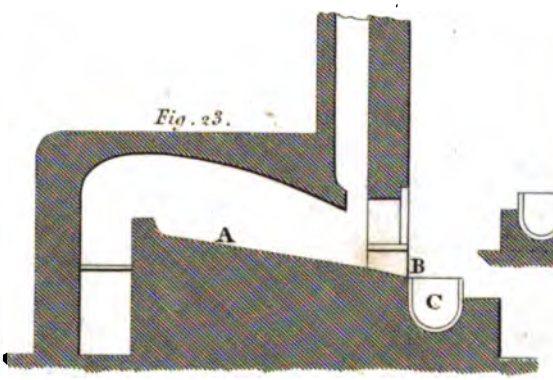

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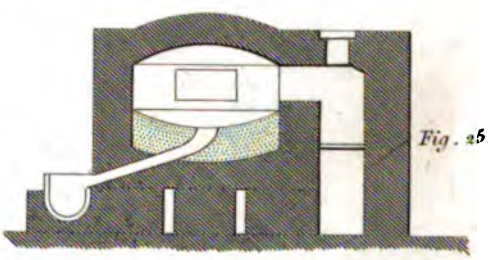

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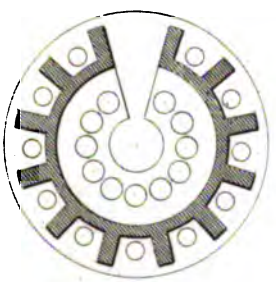

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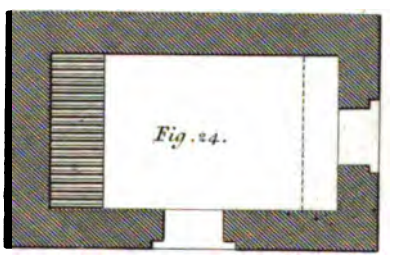
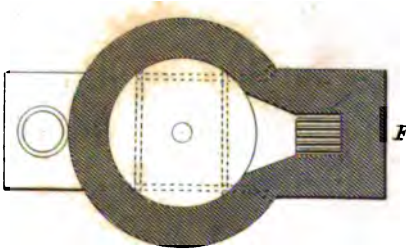


Fig. 24.



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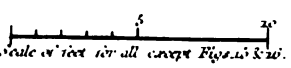

Scale of feet for all except Figs. 21 & 26.

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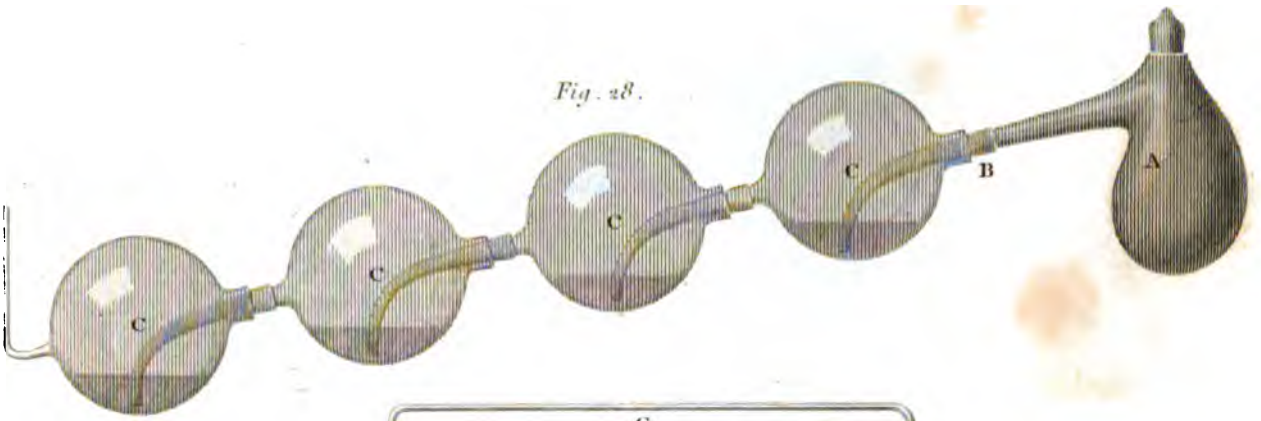
CHEMISTRY.

WOULFE'S APPARATUS.

Fig. 28.



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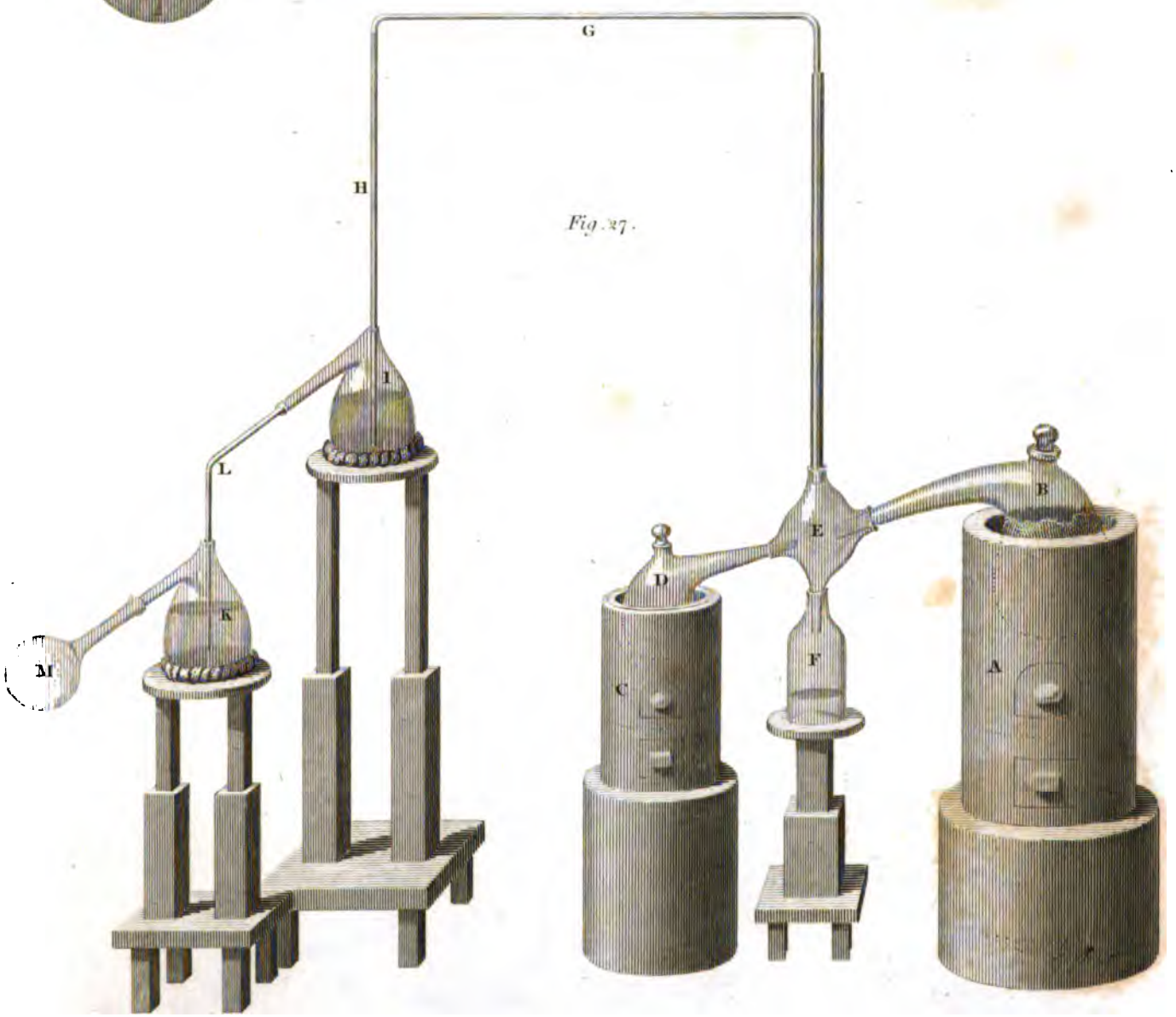

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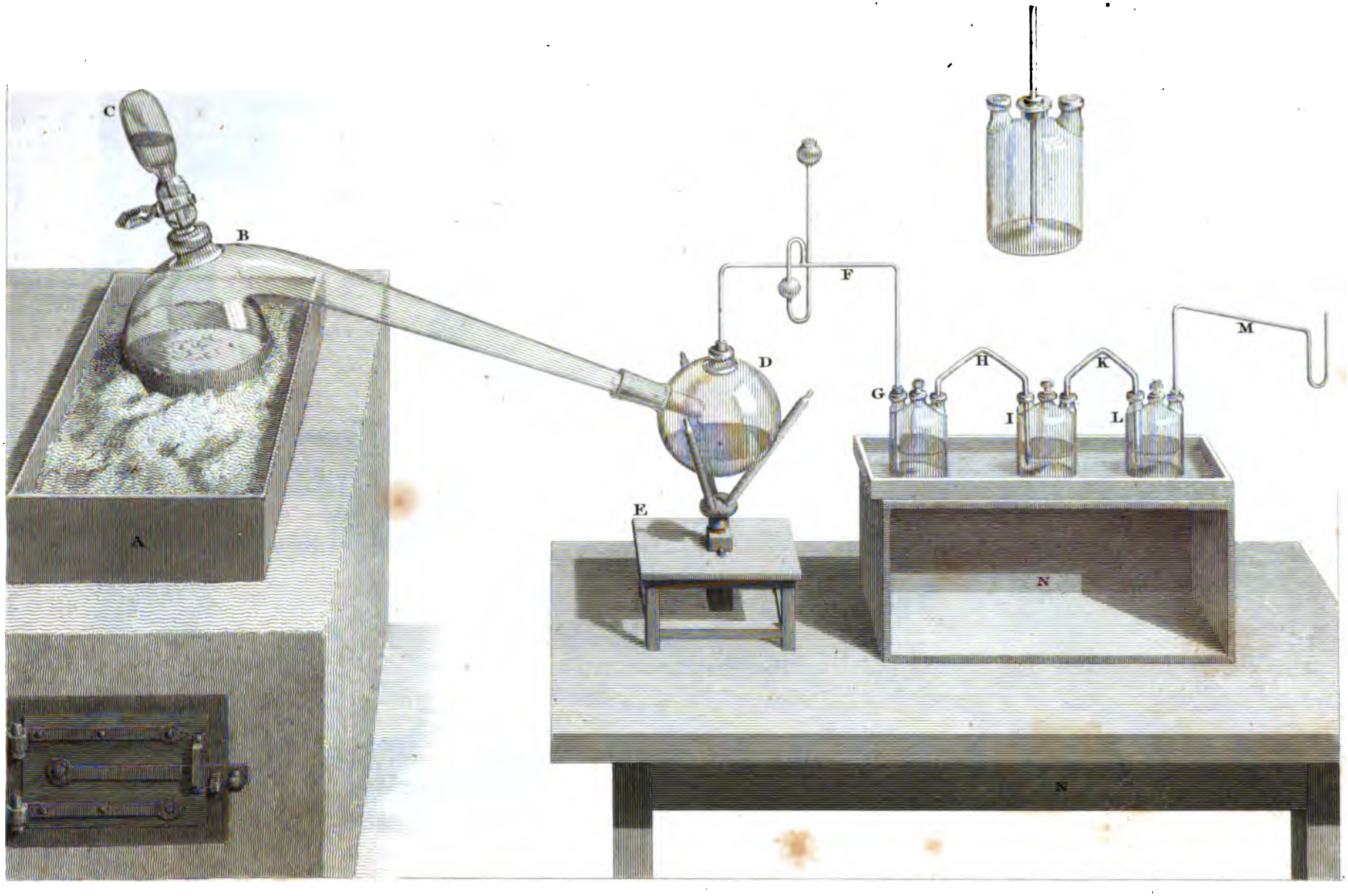
WOULFE'S APPARATUS.



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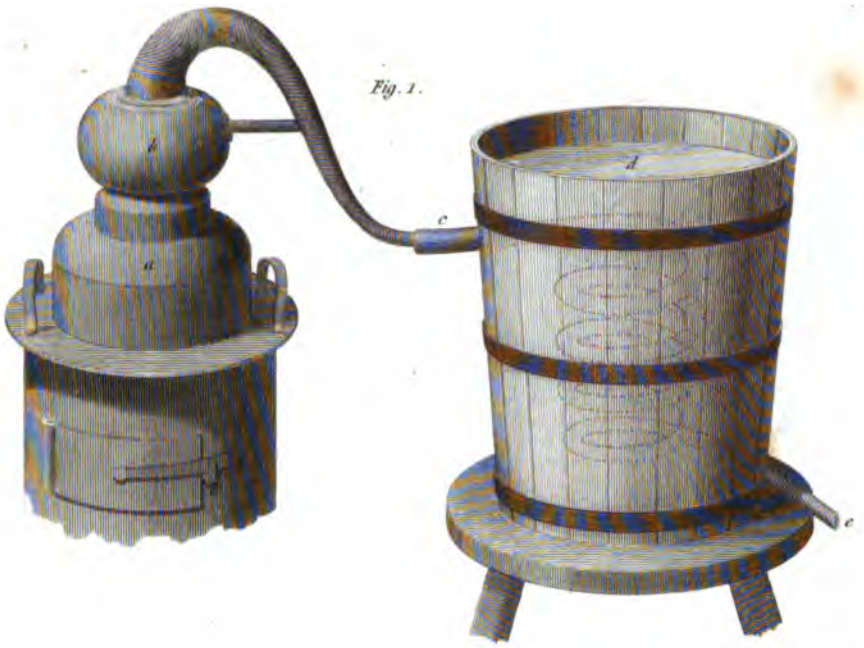
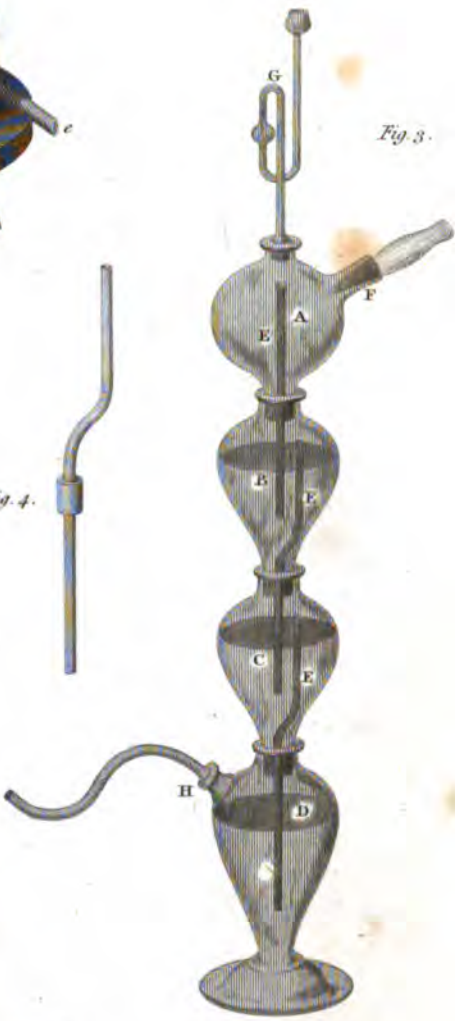
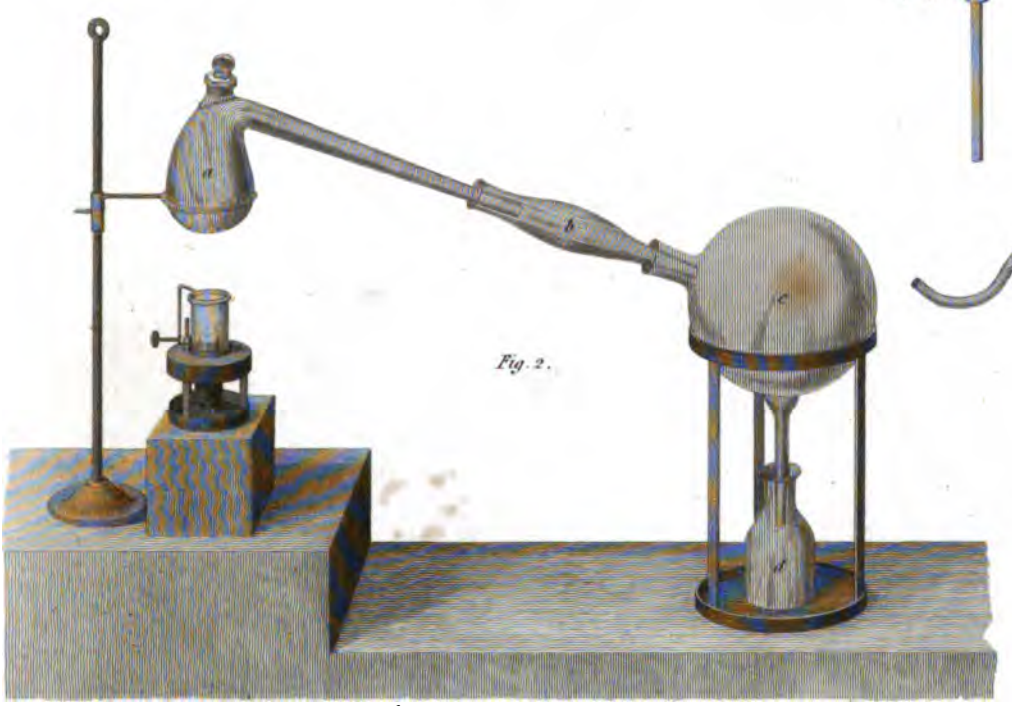
DISTILLATION.







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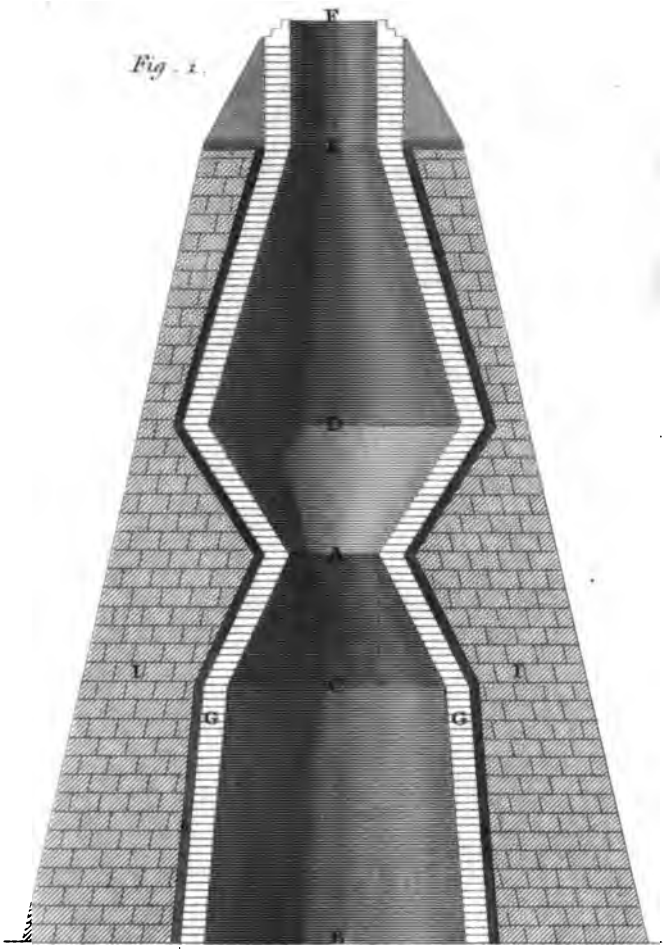
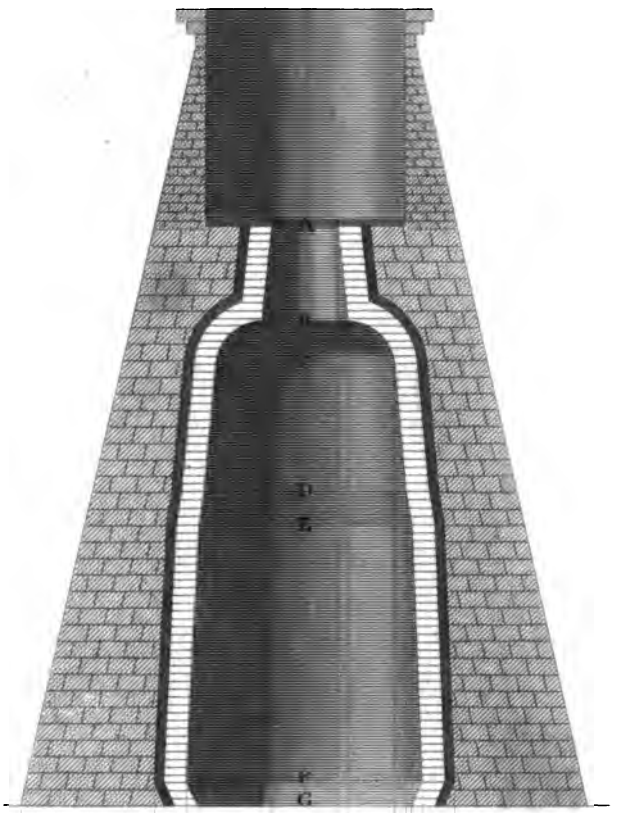
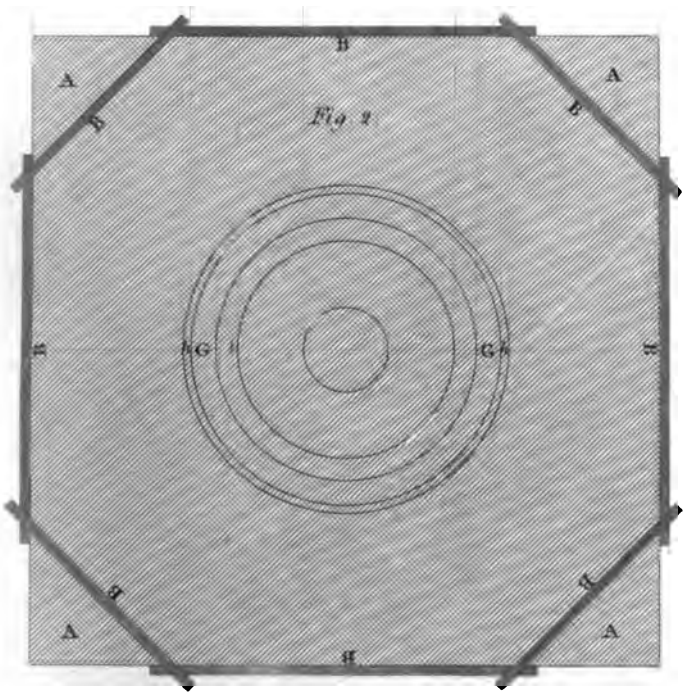
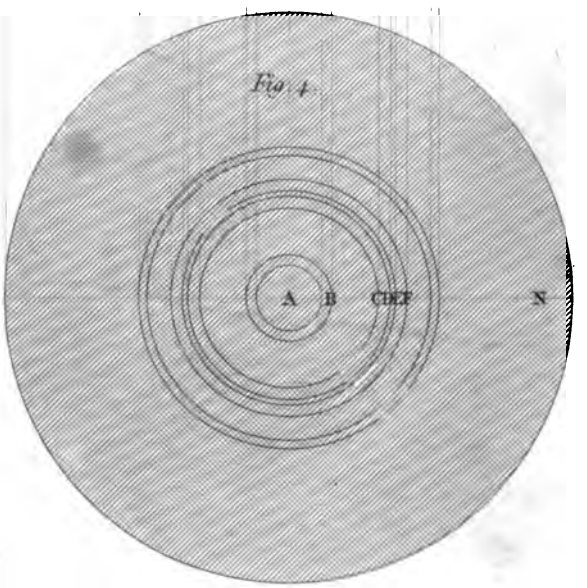
CHEMISTRY.

BLAST FURNACE.









D. Mushett.

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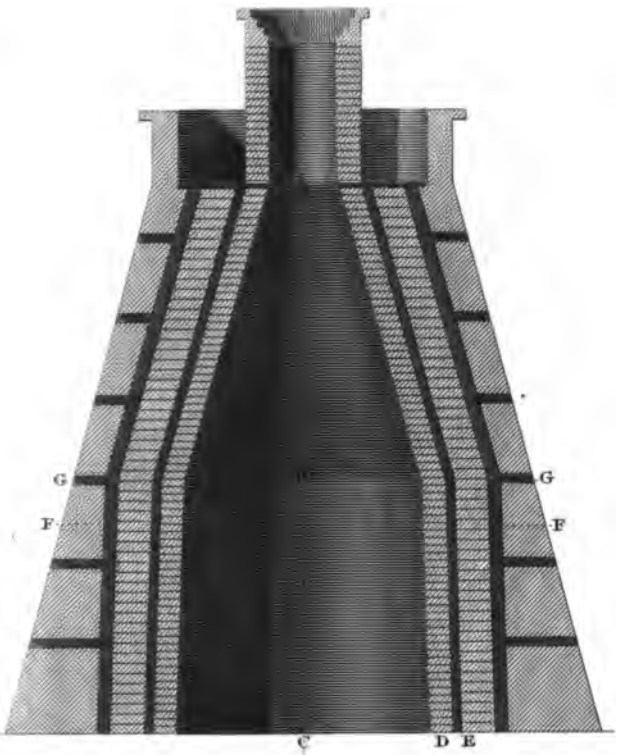
CHEMISTRY.

BLAST FURNACE.

Fig. 1.



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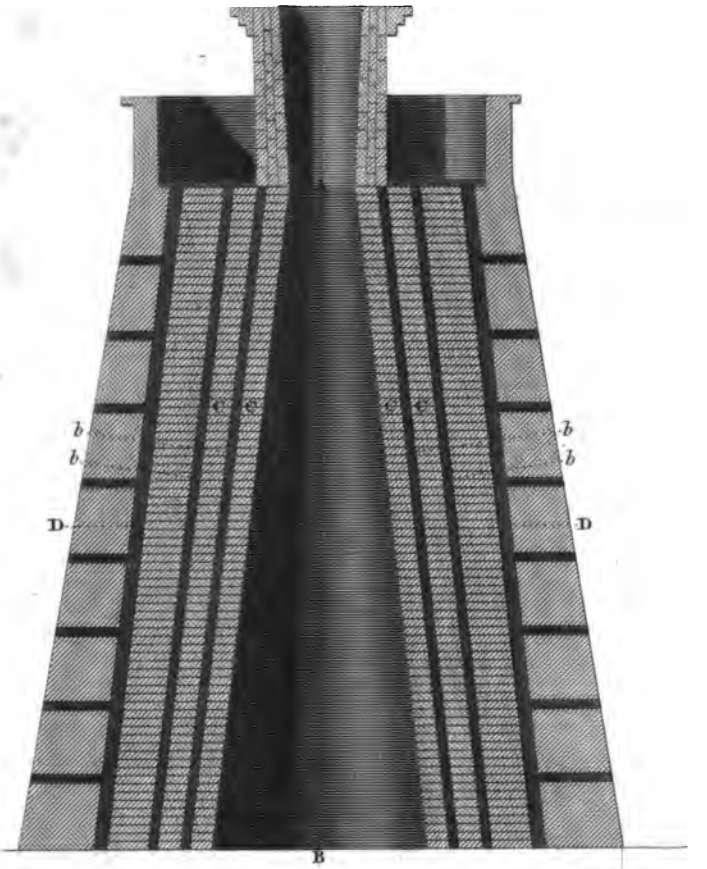

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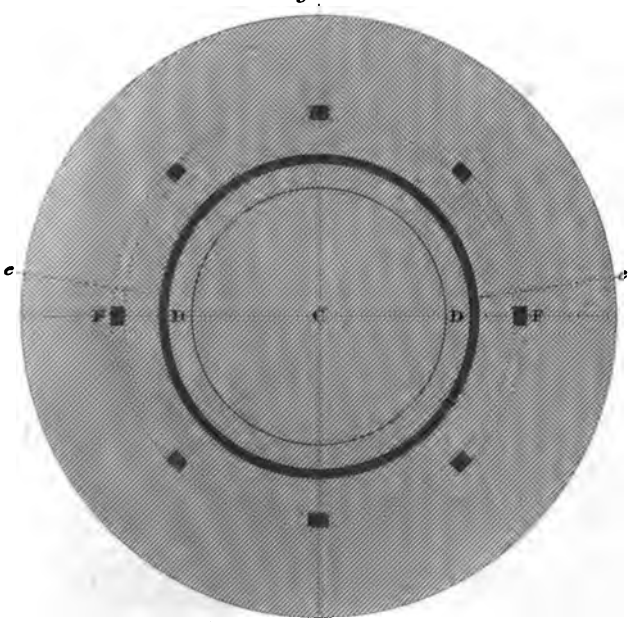

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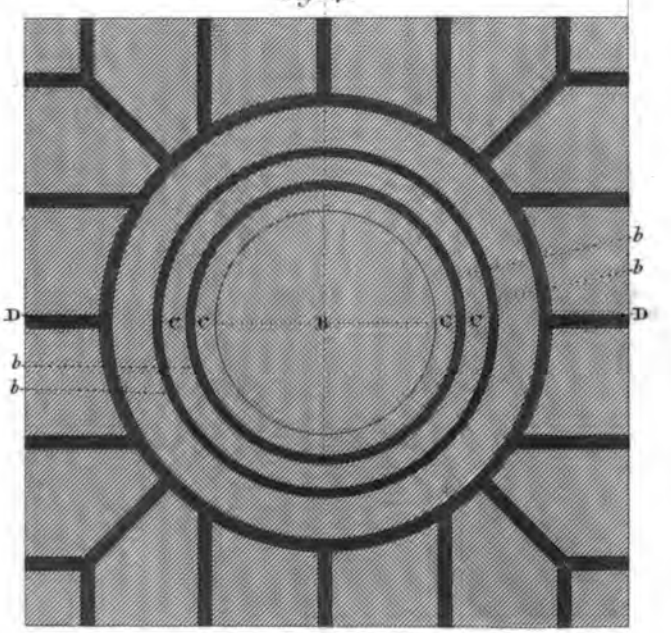

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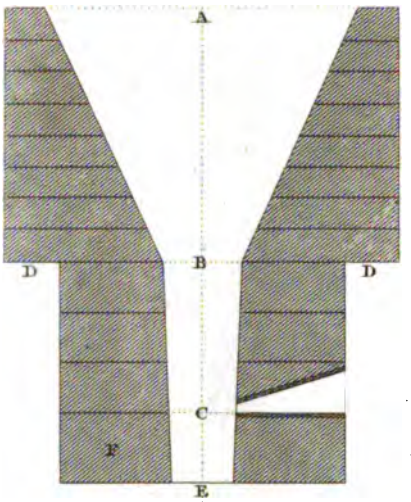
CHEMISTRY.

BLAST FURNACE.

Fig. 1.



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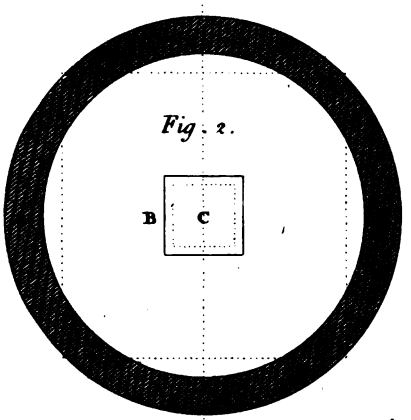

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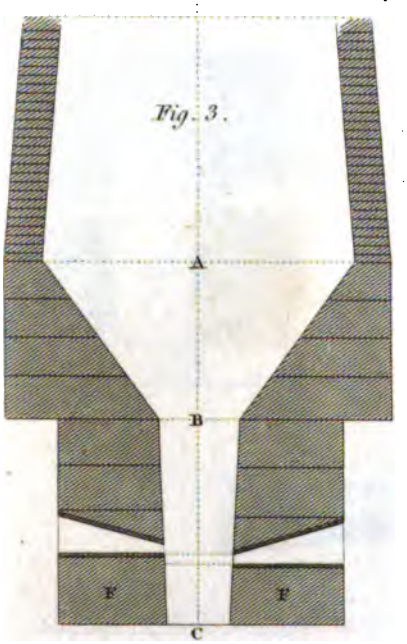

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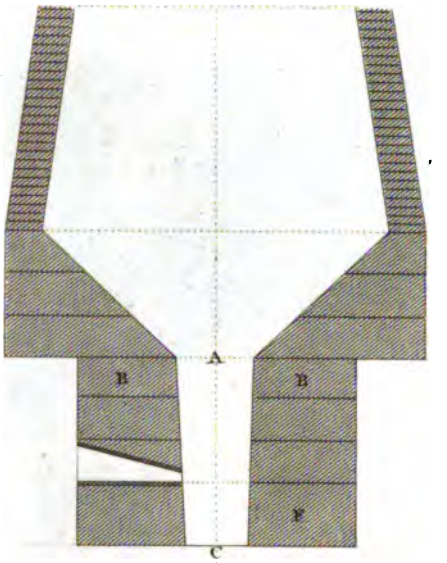

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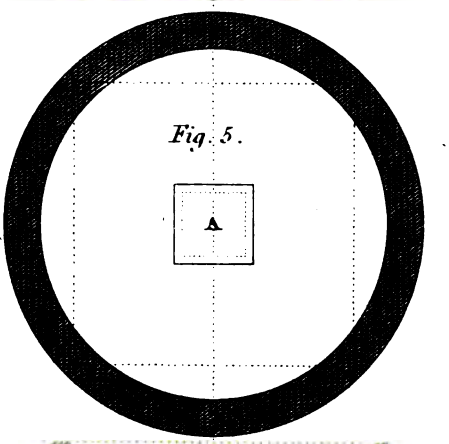

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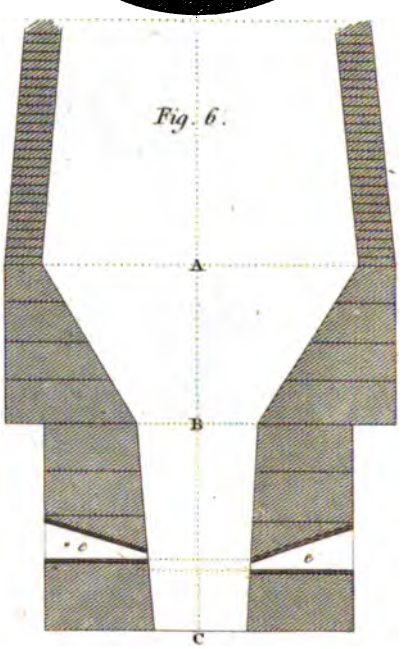

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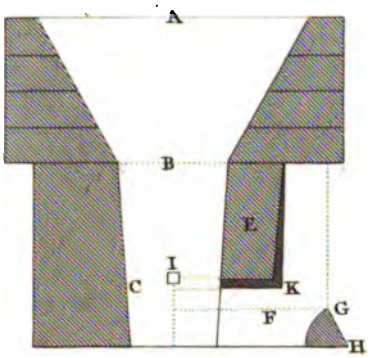
CHEMISTRY.

BLAST FURNACE.

Fig. 1.



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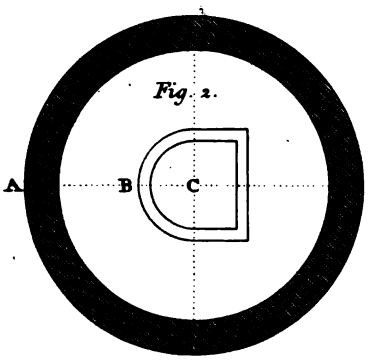

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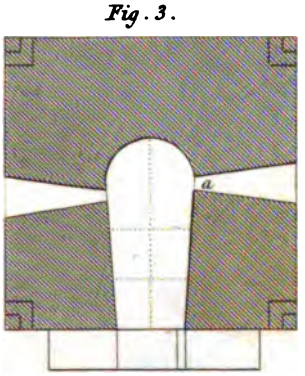

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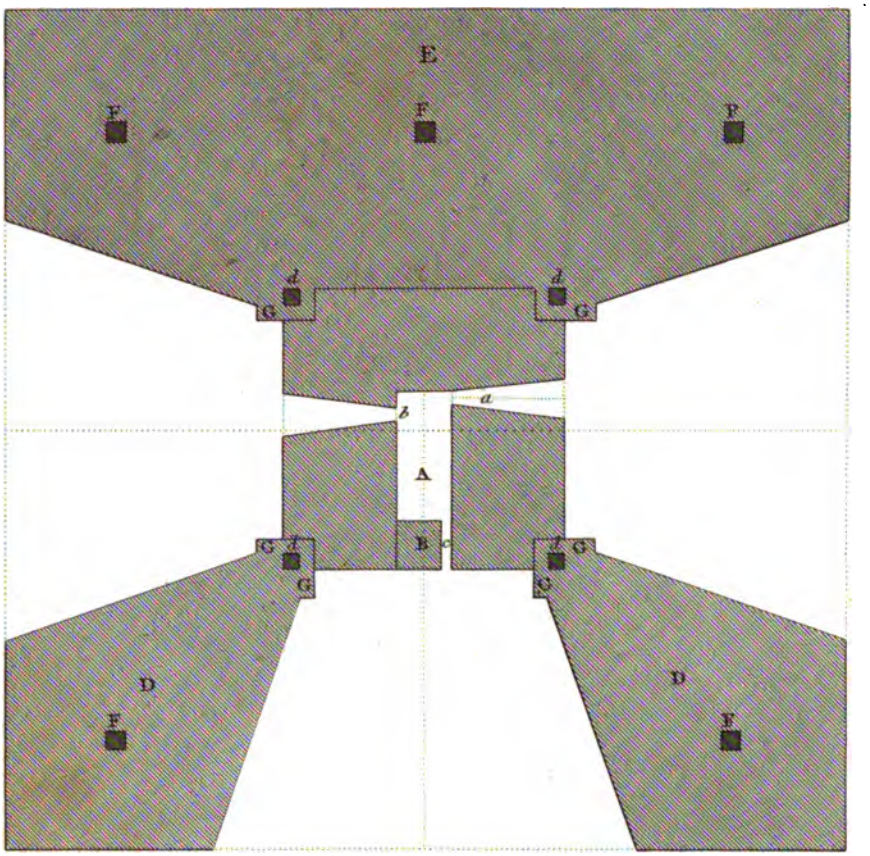

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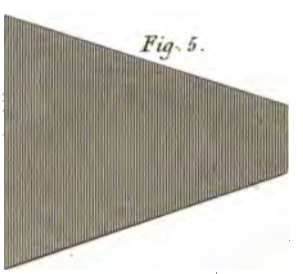

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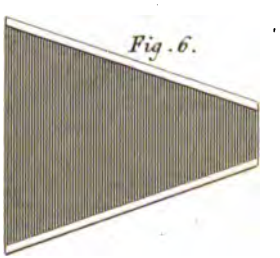

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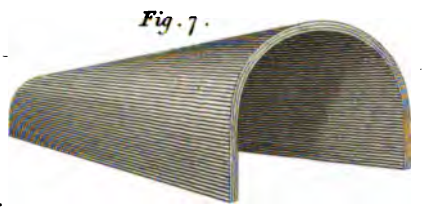

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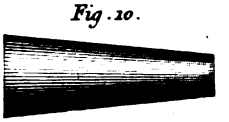

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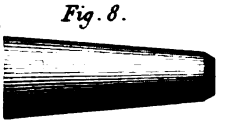

Fig. 9.

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BLOWPIPE.

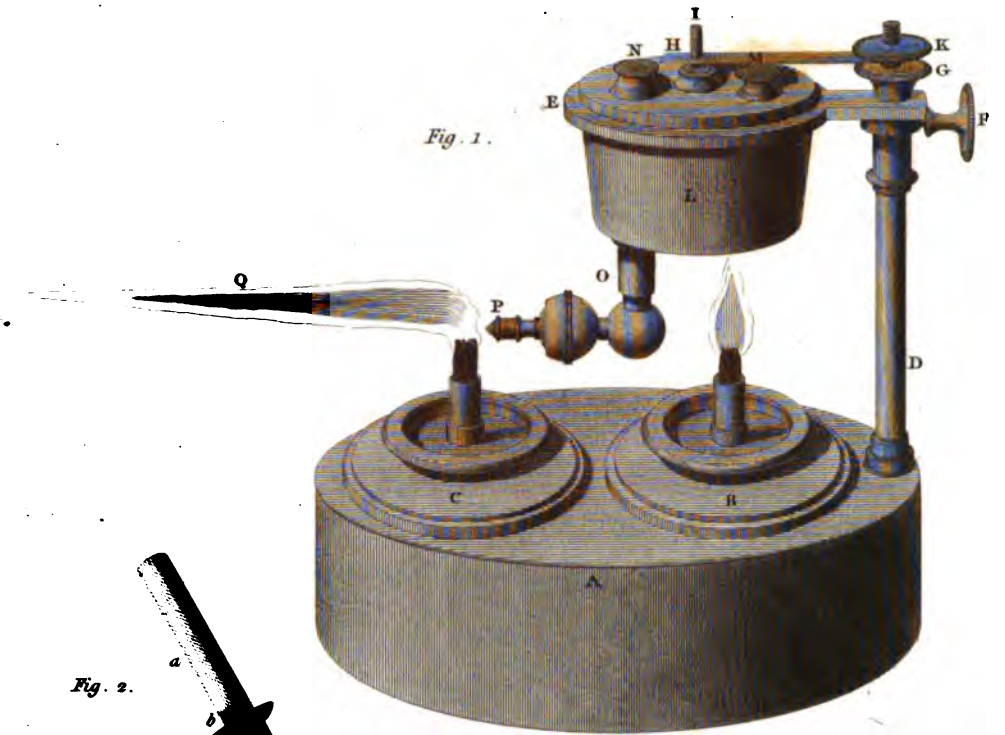
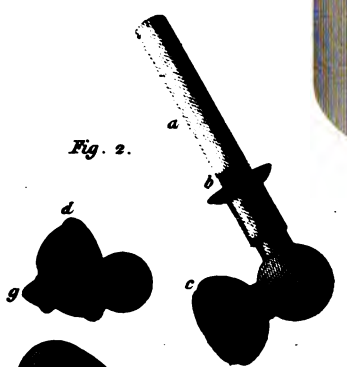


Fig. 1.



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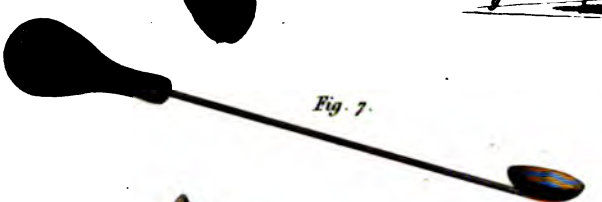

Fig. 7.

Fig. 6.

Fig. 3.

Fig. 5.

Fig. 4.

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CHEMISTRY.

PLATE XI.

ANCIENT CHEMICAL CHARACTERS.

eneral & Miscellaneous terms

- ȧ.ȧ.ȧ. *Amalgama*
- C. *Calx*
- *Caput mortuum*
- *Cinis*
- *Pulvis*
- Q.E. *Quinta Essentia*
- *Spiritus*
- *Regulus*
- *Dies*
- *Nox*
- *Mensis*
- *Hora*

Instruments & processes

- *Crucibulum*
- *Alembicum*
- *Amphora*
- B *Balneum*
- MB *Balneum Mariæ*

- *Retorta*
- *Distillare*
- *Precipitare*
- *Sublimare*
- SSS. *Stratum super Stratum*

Substances

- *Aurum*
- *Argentum*
- *Ferrum*
- *Cuprum*
- *Antimonium*
- *Argentum vivum*
- *Stannum*
- *Plumbum*
- *Arsenicum*
- *Auripigmentum*
- *Cinnabaris*
- X *Acetum - Acidum*

- X *Acetum distillatum*
- *Nitrum - Natron*
- *Vitriolum*
- *Sal commune*
- *Acidum vitriolicum*
- *Acidum Nitri*
- *Acidum Muriaticum*
- *Aër*
- *Aqua*
- *Aqua fortis*
- *Aqua regia*
- *Ignis*
- *Terra*
- *Terra vitrifiabilis*
- *Terra fusibilis*
- *Vitrum*
- *Argilla*
- *Gypsum*

- *Talcum*
- *Arena*
- *Calx viva*
- C C *Cornu Cervi*
- *Alkali*
- *Alkali fixum*
- *Alkali volatile*
- *Alumen*
- *Tartarus*
- *Sal ammoniacum*
- *Sal Gemmæ*
- *Borax*
- *Ærugo æris*
- *Tutia*
- *Sulphur*
- *Urina*
- V *Vinum*
- *Spiritus vini*
- OO *Oleum*

BERGMAN'S CHEMICAL CHARACTERS.

- + *Acid*
- *Alkali*
- *Vitriol*
- *Phlogiston*
- *Dephlogisticated*
- *Nitre*
- *Sea salt*
- *Aqua regia*
- F. *Fluor*
- *Borax*
- *Sugar*
- *Tartar*
- *Sorrel*
- C. *Lemon (Citrus)*
- *Benzoe*
- *Amber*

- *Sugar of milk*
- *Distilled vinegar*
- *Milk*
- *f* *Ants (Formicæ)*
- *Fat*
- *Phosphorus*
- *Prussian blue*
- *Fixed*
- *Volatile*
- *v.* *Vegetable*
- *m.* *Mineral - Mild*
- *p.* *Pure*
- *c* *Lime (Calx). Caustic*
- *Barytes*
- *Lime - Metallic calx*
- *Magnesia*

- *Clay*
- *Silex*
- *Water*
- *Vital air*
- *Matter of Heat*
- *Sulphur*
- *Spirit of wine*
- *Ether*
- *Essential oil*
- *Expressed oil*
- *Gold*
- *Platina*
- *Silver*
- *Mercury*
- *Lead*
- *Copper*

- *Iron*
- *Tin*
- *Bismuth*
- *Nickel*
- *Arsenic*
- *Cobalt*
- *Zinc*
- *Antimony*
- *Manganese*

Examples of Combination

- *v p Pure fixed vegetable alkali*
- *v Vitriolated fixed - vegetable alkali*
- *Calx of Iron*
- *Mercury sublimate*
- *Dephlogisticated Muriatic acid*

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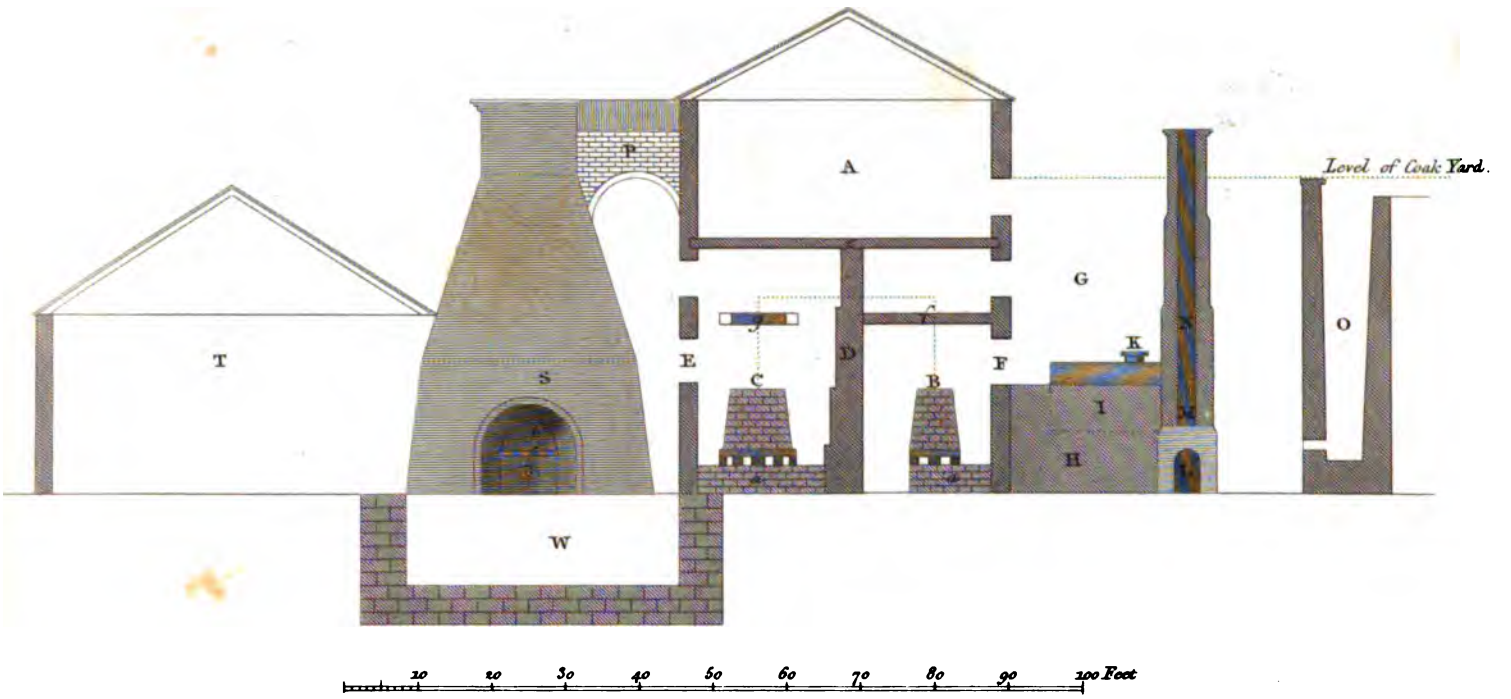
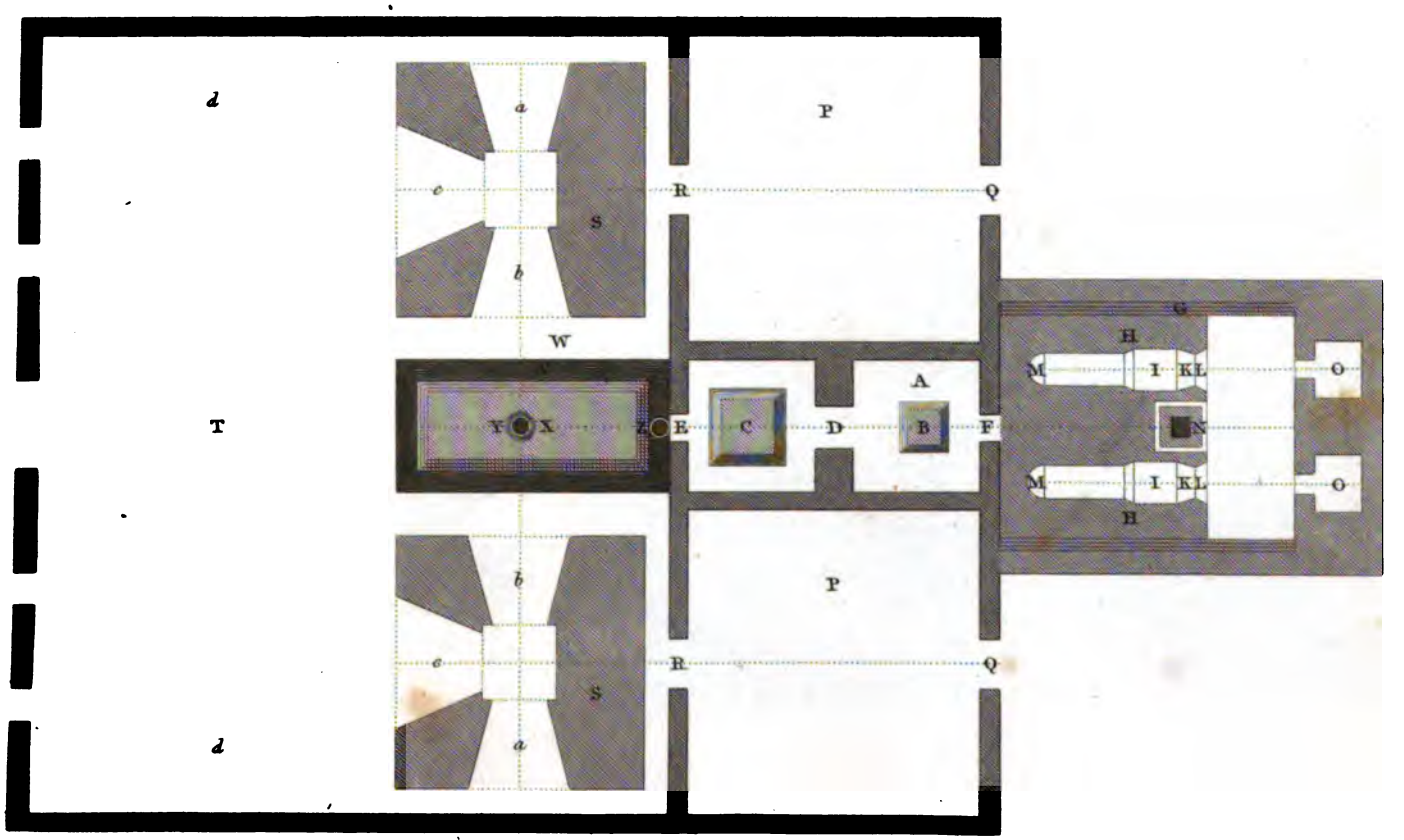
CHEMISTRY.

BLAST FURNACE WORKS.





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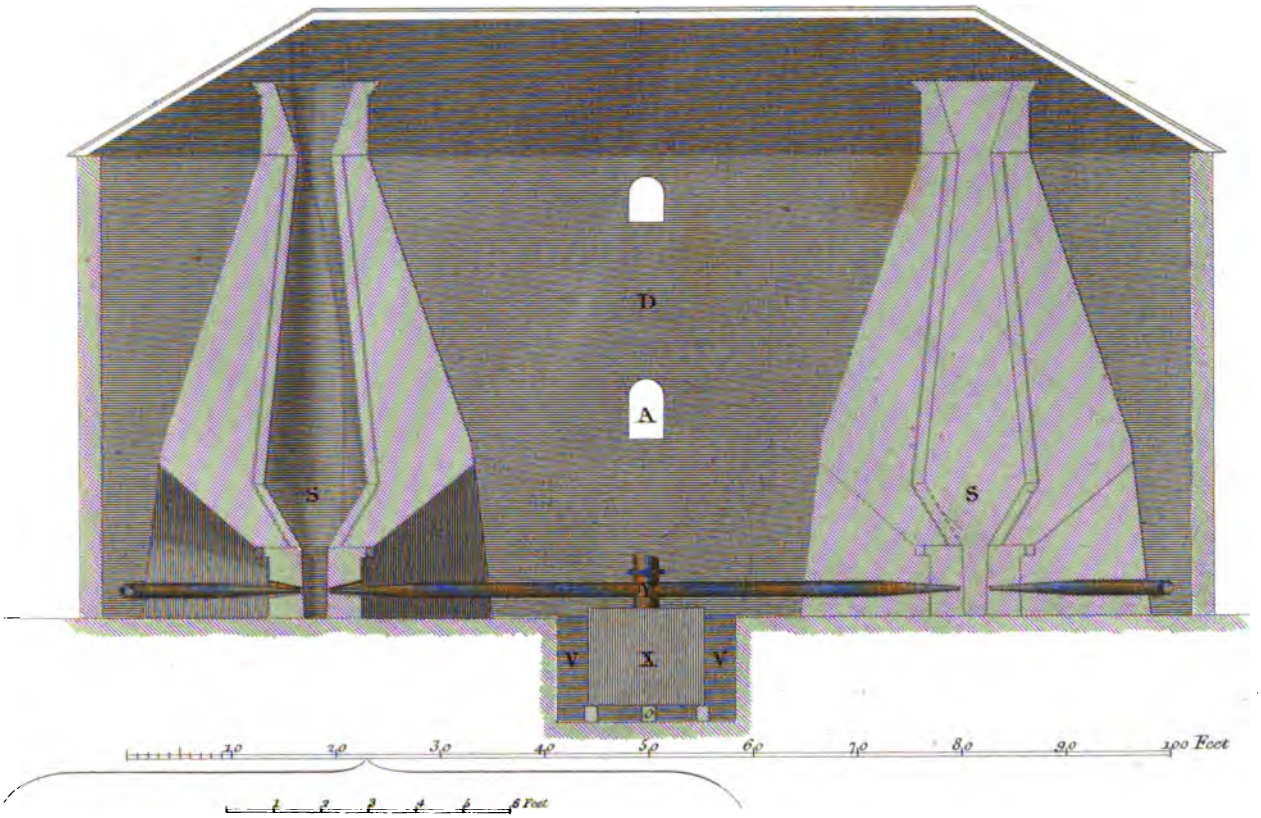
CHEMISTRY.

BLAST FURNACE WORKS.



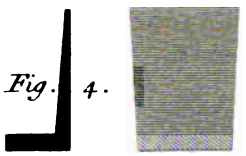


Fig. 4.

Tymp Plate

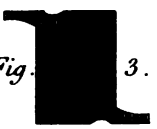


Fig. 3.

Dam Plate

Fig. 2.

Dam Stone

Fig. 1.

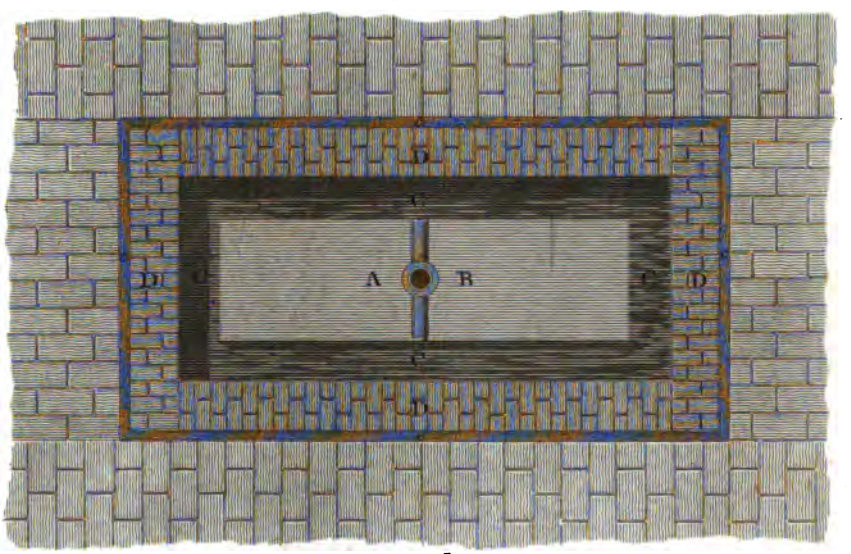
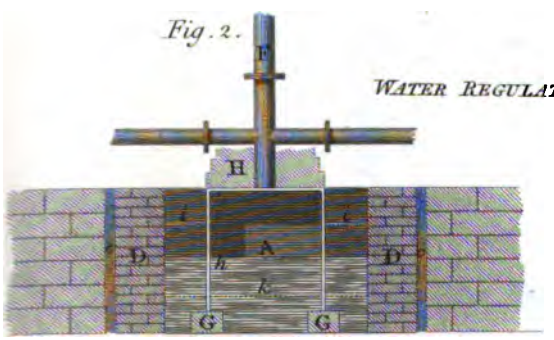


Fig. 2.

WATER REGULATOR



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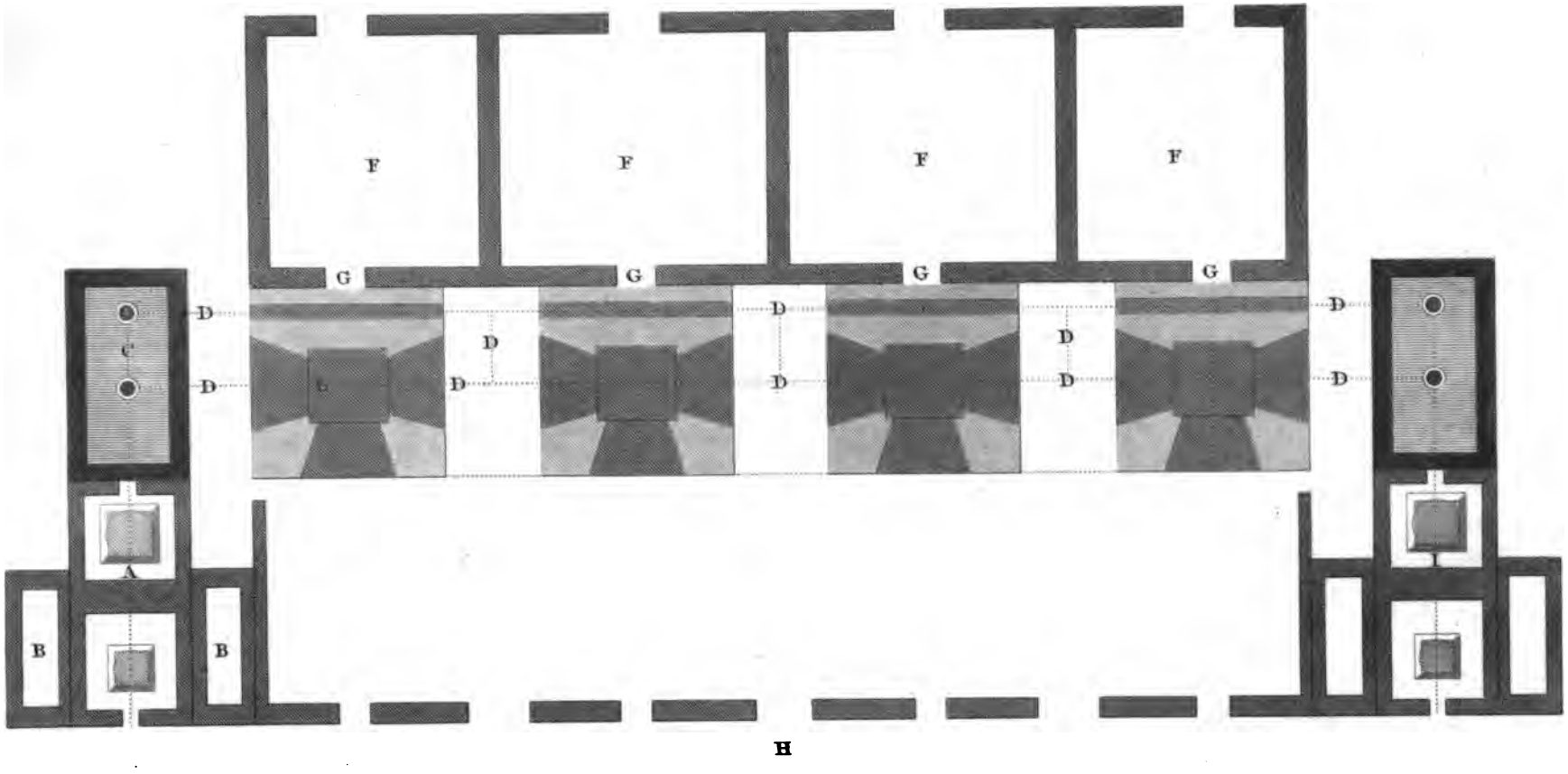
CHEMISTRY.

BLAST FURNACE WORKS.



Scale of 10 20 30 40 50 60 70 80 90 100 110 120 Feet

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CHEMISTRY.

GAZOMETER & BLOW PIPE.

Fig. 1.

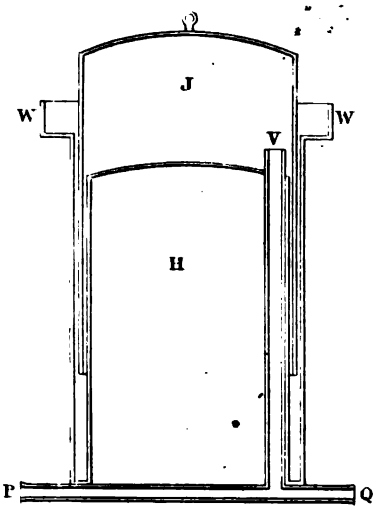


Fig. 2.

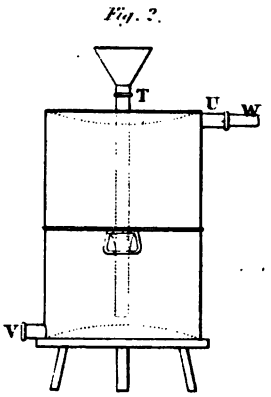
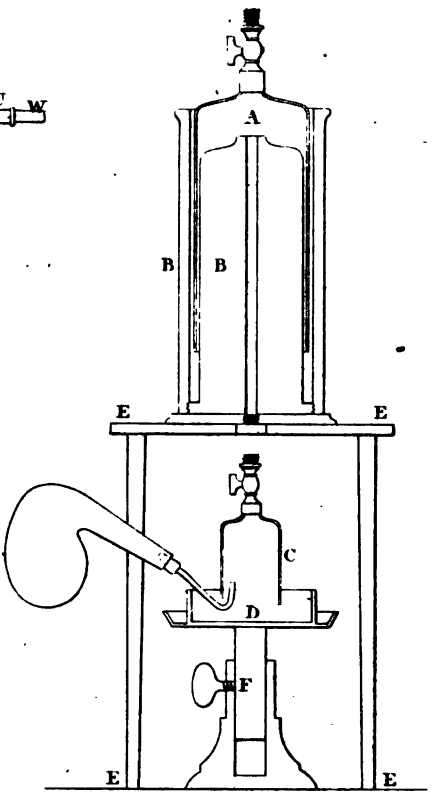
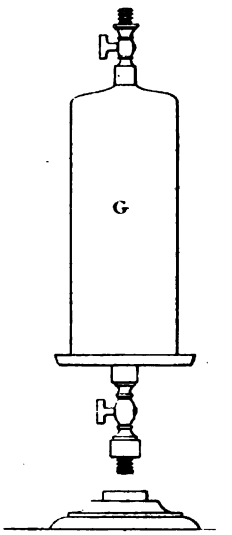
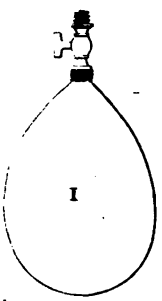
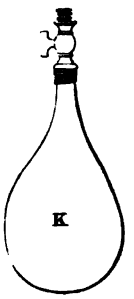


Fig. 3.









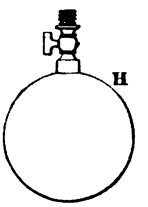
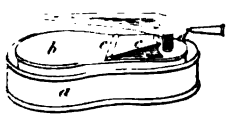


Fig. 6. SHOE LAMP.



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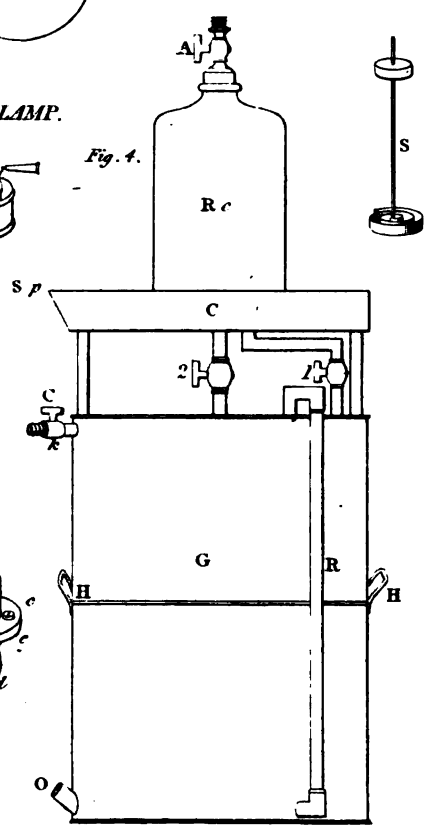
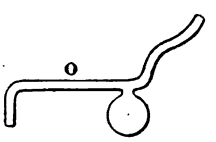




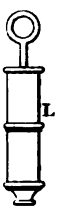
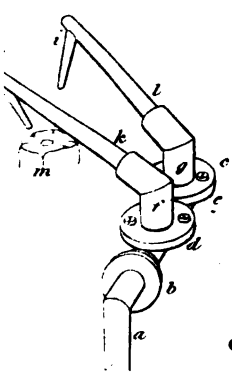


Fig. 7.
Double BLOW PIPE.



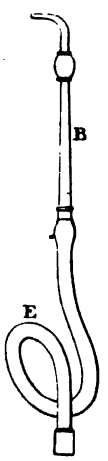
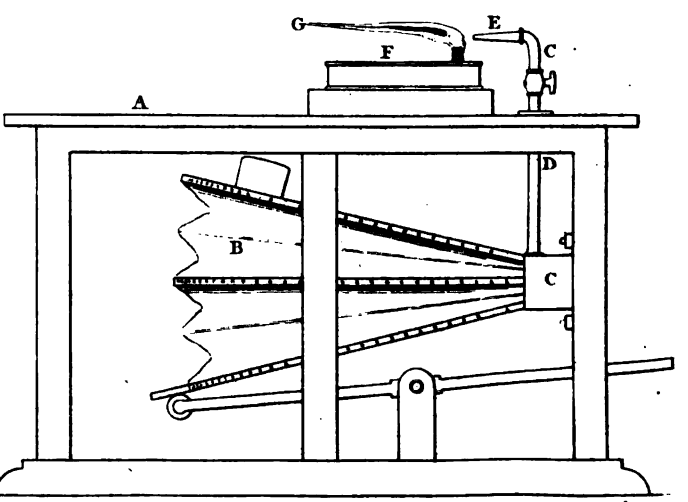


Fig. 5. Glass blower's Lamp.



CHEMISTRY.

AIR VAULT.

Fig. 1.

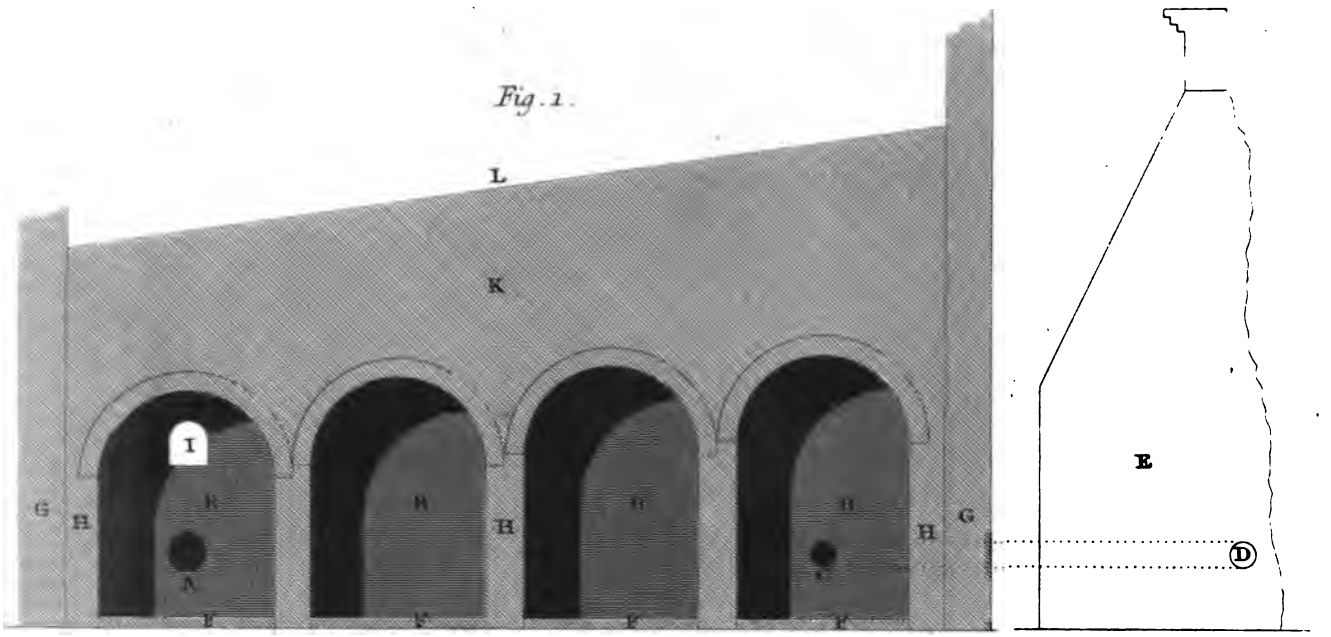
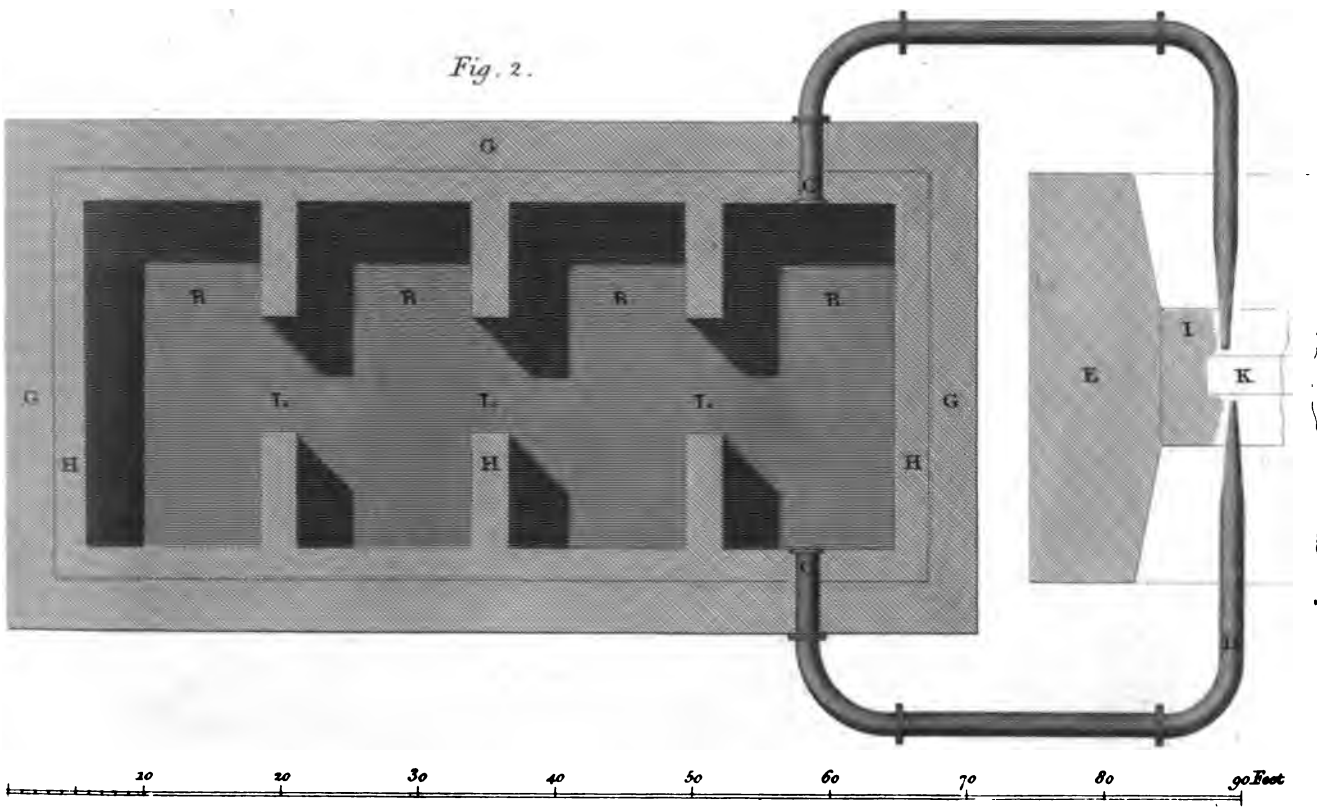


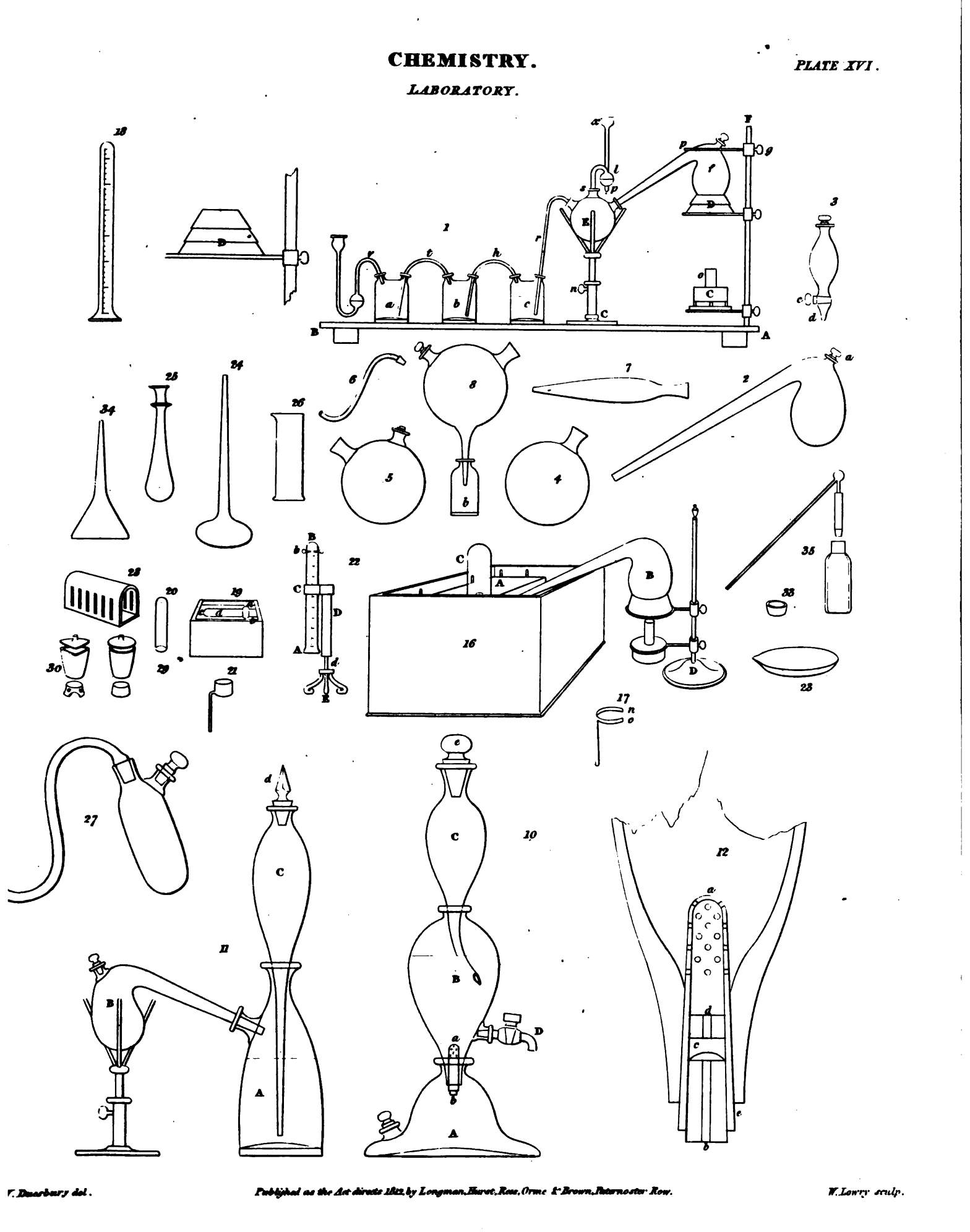
Fig. 2.



Drawn by D. Mushet. Published as the Act directs, Aug.t 1.st 1805, by Longman, Hurst, Rees & Orme, Paternoster Row. Engraved by Wilson Lowry.

CHEMISTRY.

LABORATORY.



V. Dearbury del. Published as the Act directs 1812, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. W. Lowry sculp.

LABORATORY.

Fig. 15.

Fig. 9.

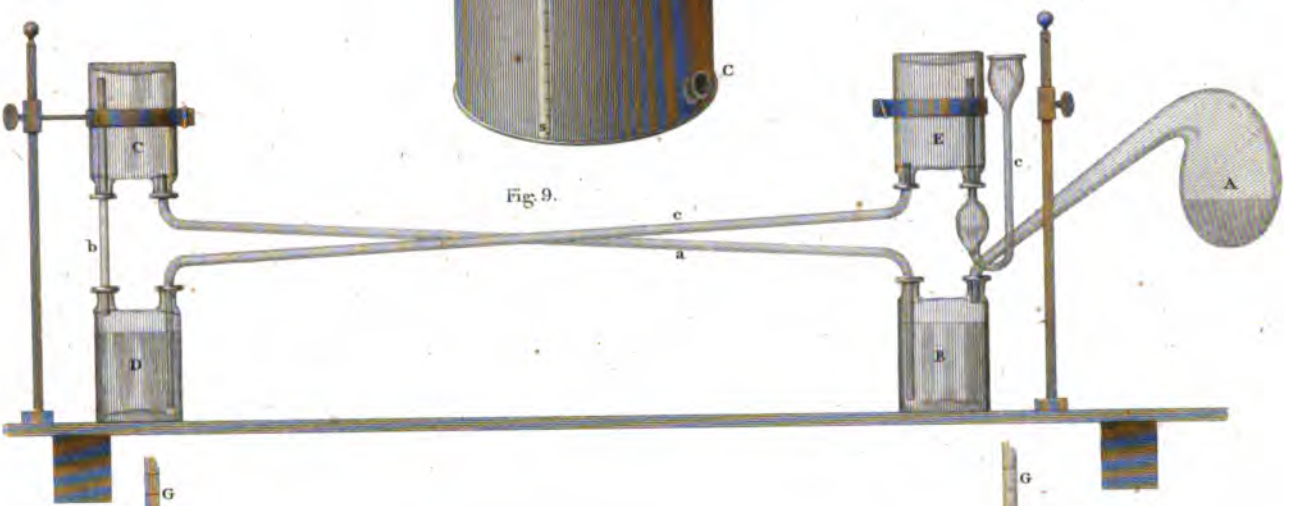


Fig. 14.

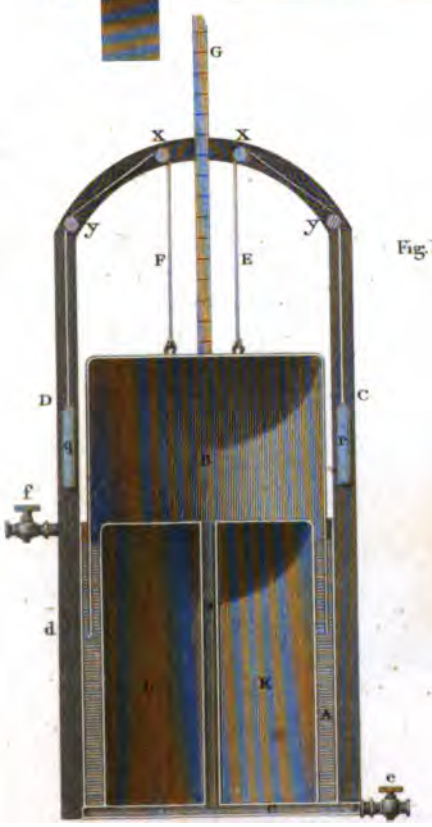
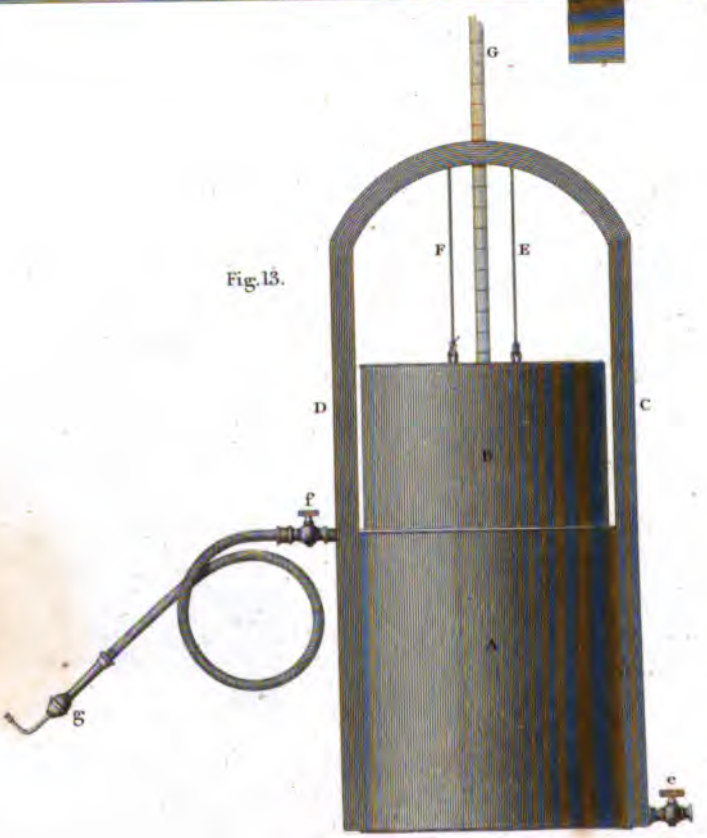


Fig. 13.

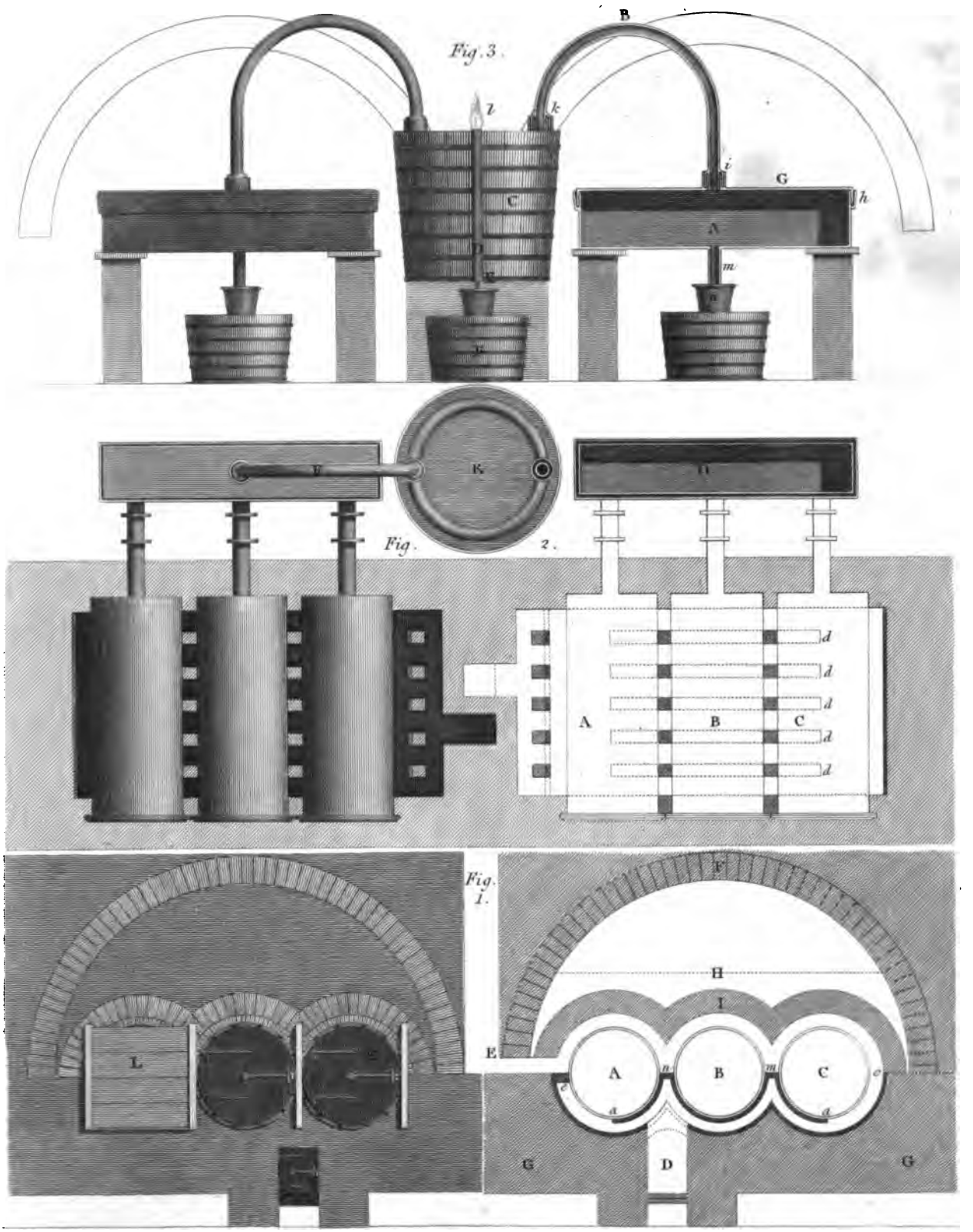


W. Lowry sculp.

Published as the Act directs, 1812, by Longman, Hurst, Rees, Orme and Brown, Paternoster Row, London.

CHEMISTRY.

APPARATUS FOR THE DISTILLATION OF PYROLIGNEOUS ACID.



Drawn by William Thomson.

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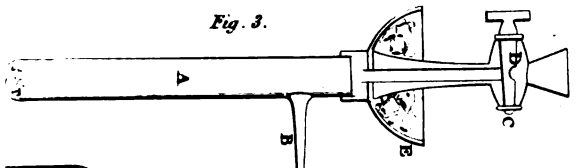
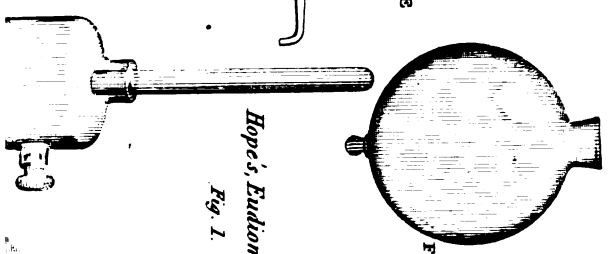
Engraved by Wilson Lowry.

Gay Lussac & Thenard's Apparatus.

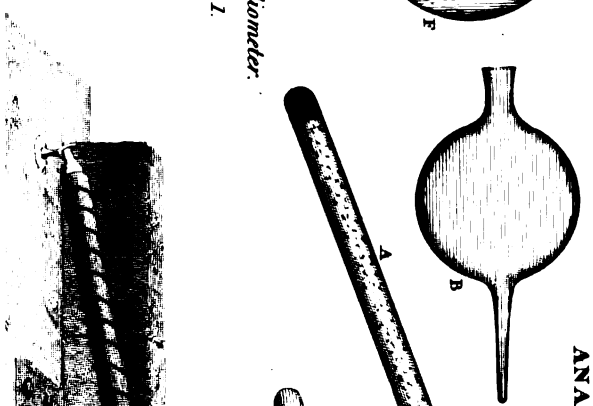
Fig. 3.





Hope's Eudiometer.

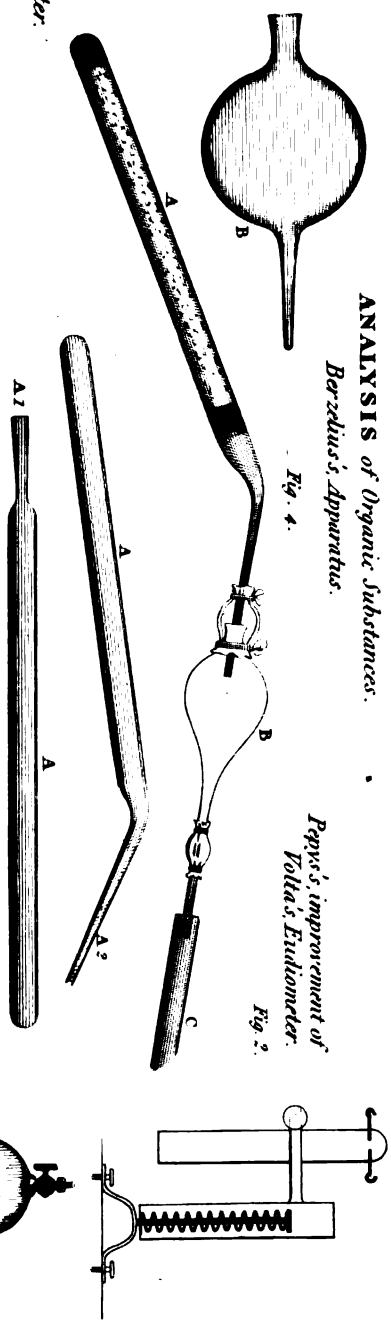
Fig. 1.



ANALYSIS of Organic Substances.

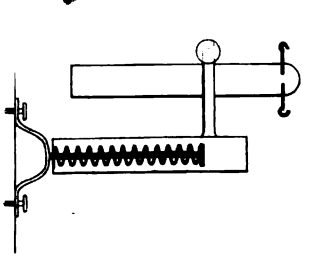
Berzelius's Apparatus.

Fig. 4.



Peppys's improvement of Volta's Eudiometer.

Fig. 2.



Dr. Wollaston's Scale of Chemical Equivalents.

Fig. 6.

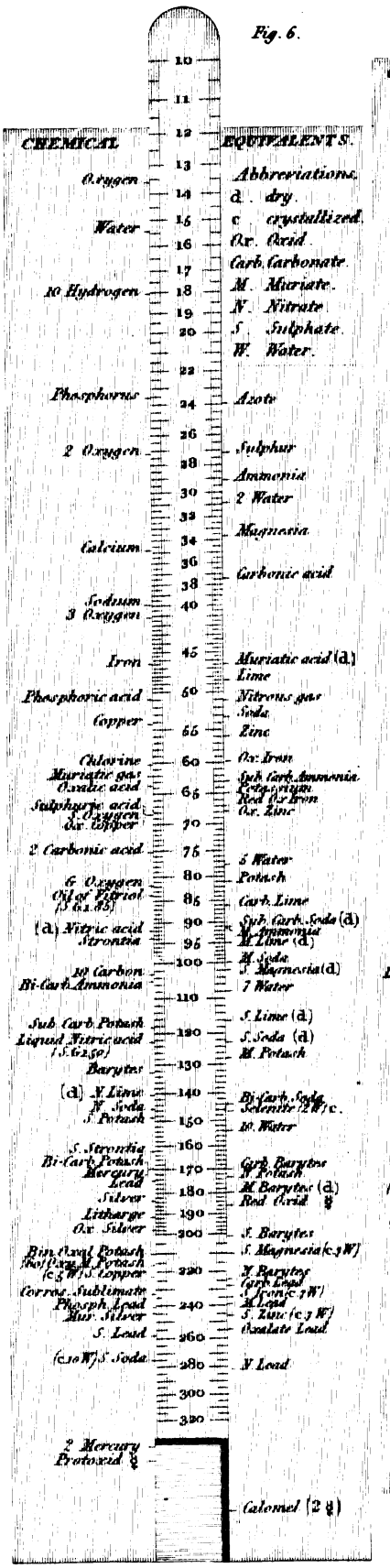
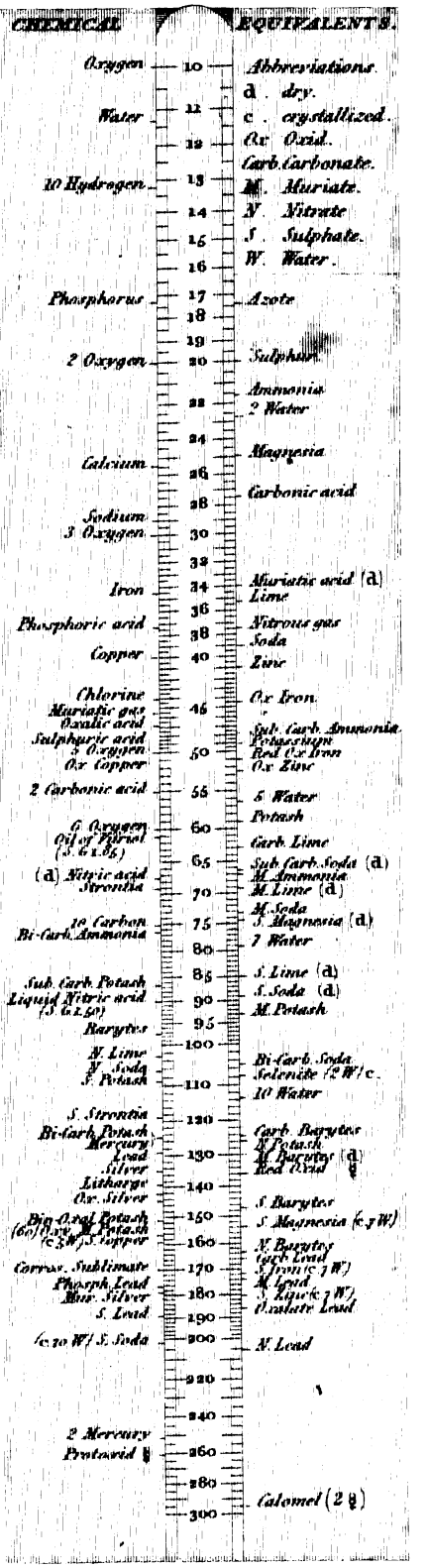
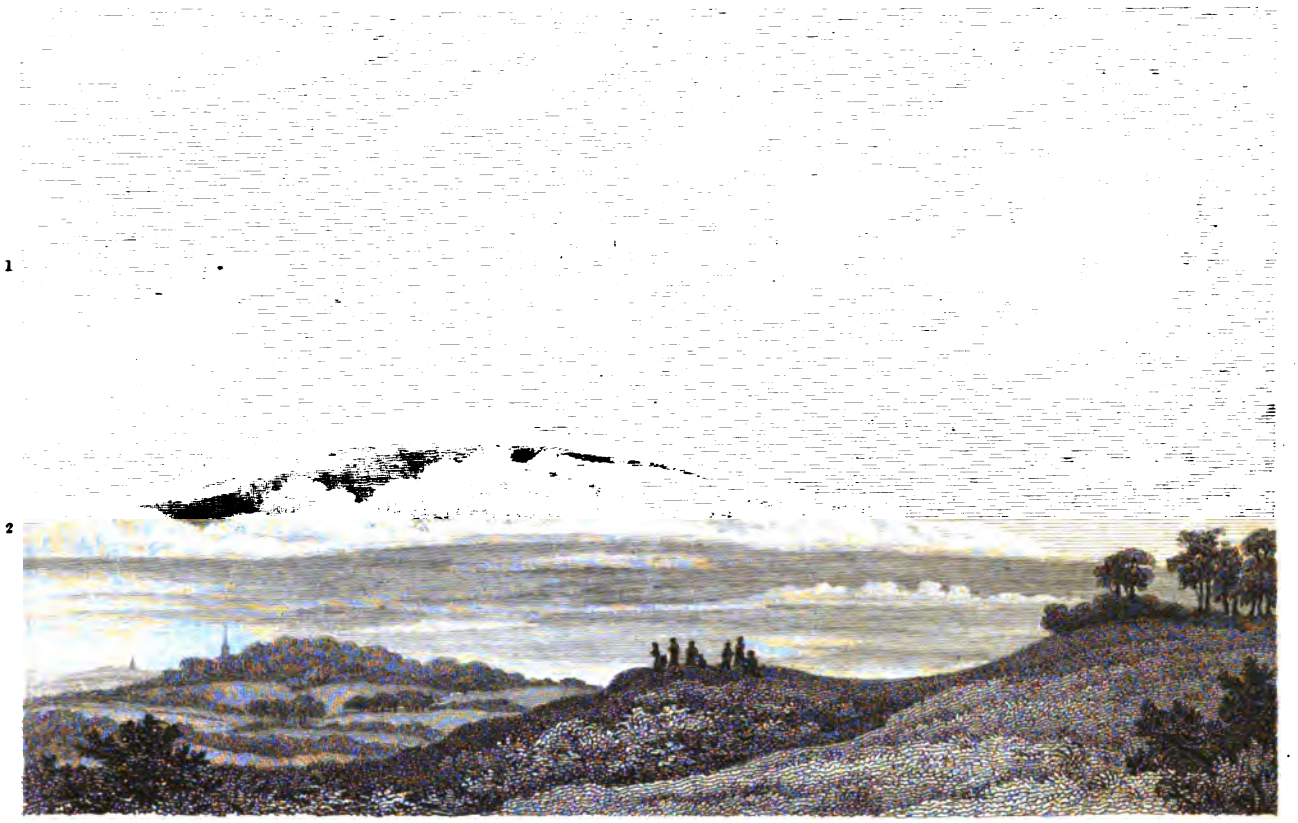


Fig. 5.





1. **Cirrus**, *in different forms* _ 2. **Cirro-stratus**, *subsiding on* **Cumuli**, *beneath* _ 3. **Cirrus**, *as seen before Thunder* _ 4. **Cirro-cumulus**, *as seen before Thunder.*

5. **A Nimbus**, *flanked by* **Curro-stratus**, *and giving an Electrical discharge* _ 6. *A range of* **Cumuli**, *passing to* **Cumulo-strati**, *before Thunder.*

Published as the Act directs. June. 1820. by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.

CLOUDS.

1. Cirro-stratus _ 2.2. *distant* Cirri strati _ 3.3. Cirrus *passing to* Cirro cumulus _ 4. Cirro-stratus, Cumulus *and* Cumulo-stratus *grouped*.

COMPOSITION.

1

1

1

3

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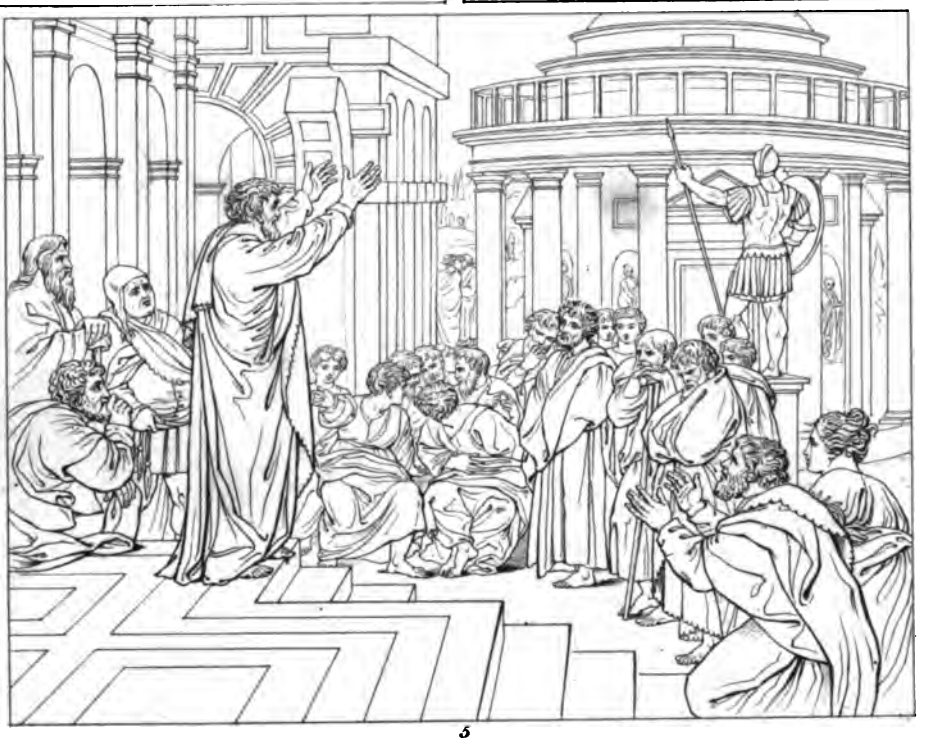
COMPOSITION.

9

6

2

5

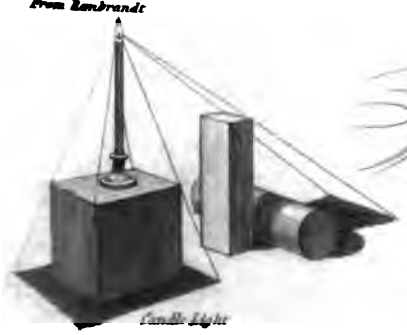


3

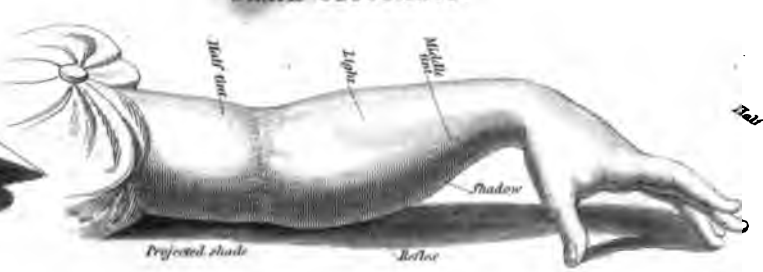
From Rembrandt

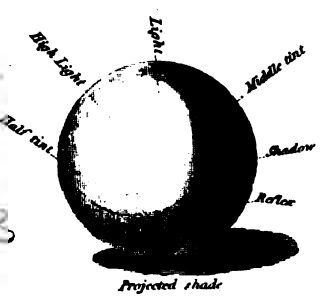
From Da Vinci

CLAIR OBSCURE. 1.



Candle Light

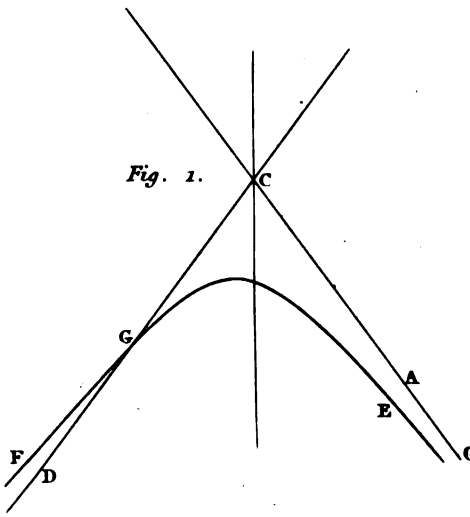




Published as the Act directs July 1.1810 by Longman Hurst Rees Orme & Brown Paternoster Row.

AMBIGENAL.

Fig. 1.



ASYMTOTE.

Fig. 2.

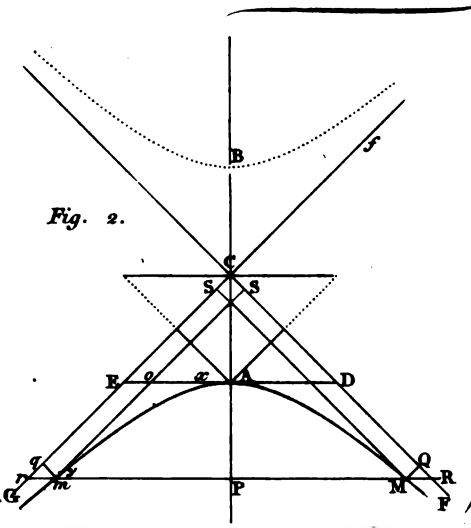
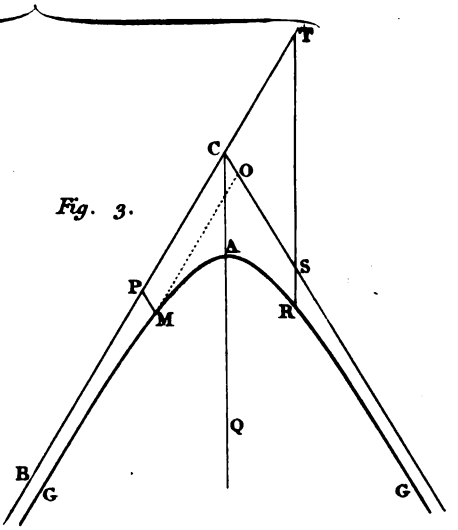


Fig. 3.



CONE.

Fig. 4.

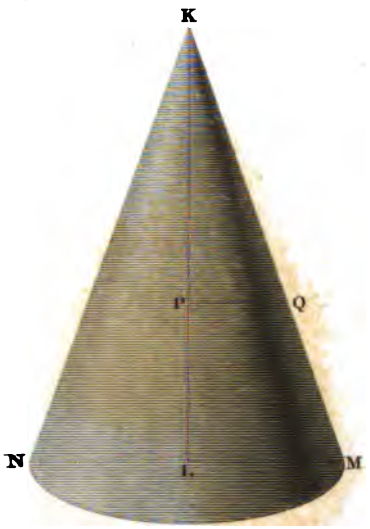


Fig. 5.

Fig. 6.

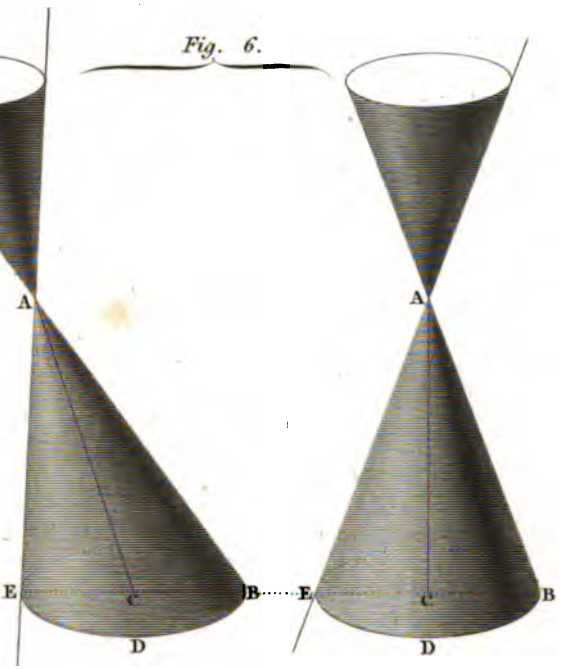
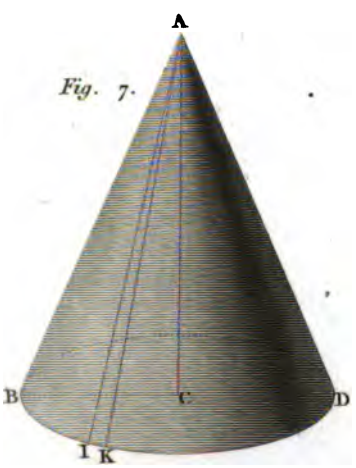


Fig. 7.



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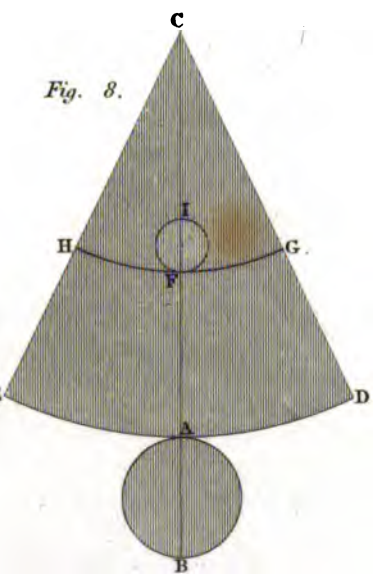


Fig. 9.

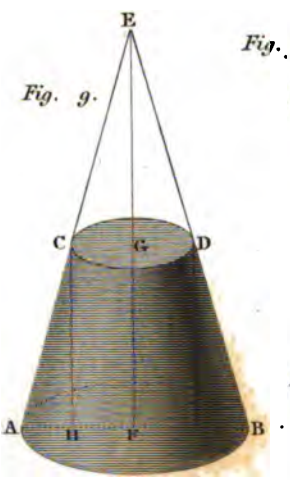
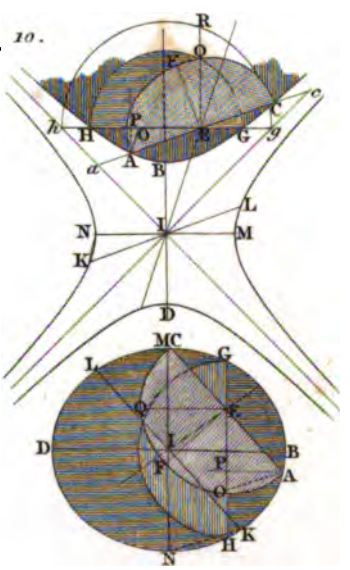


Fig. 10.



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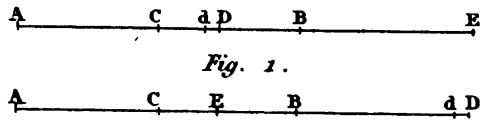

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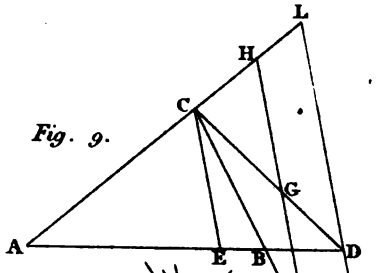

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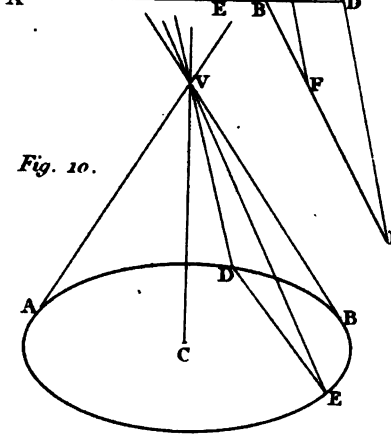

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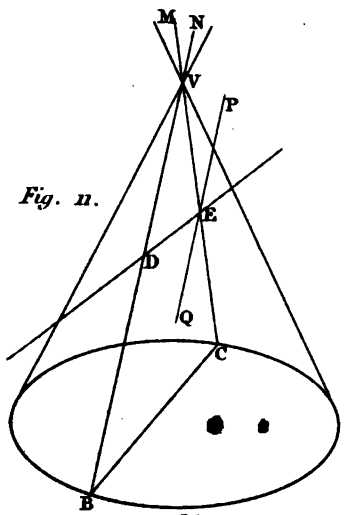

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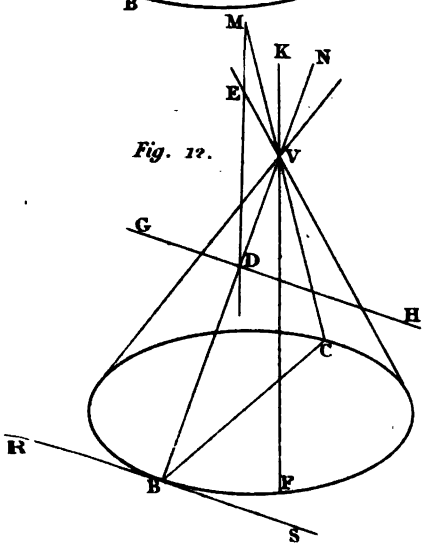

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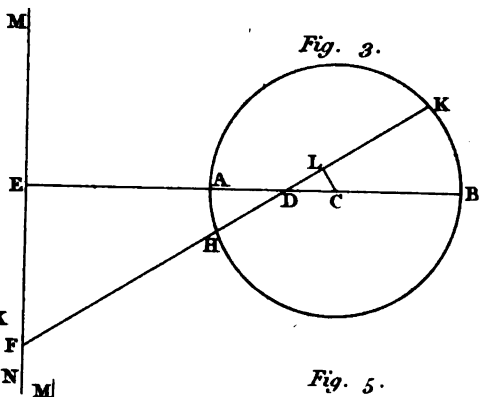
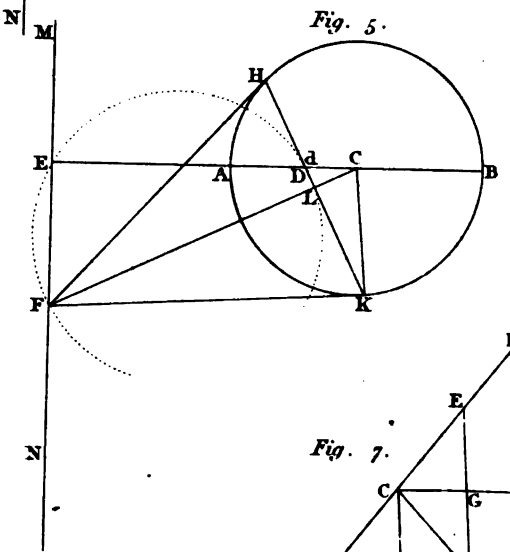


Fig. 3.



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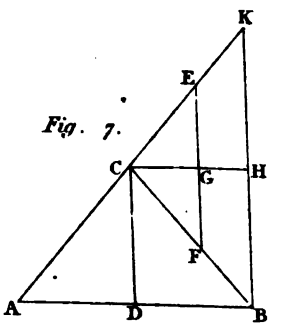

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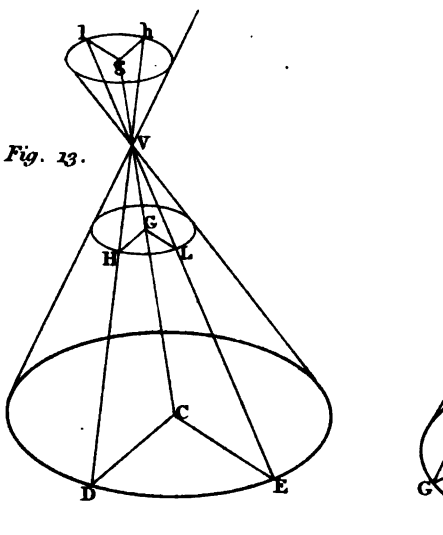
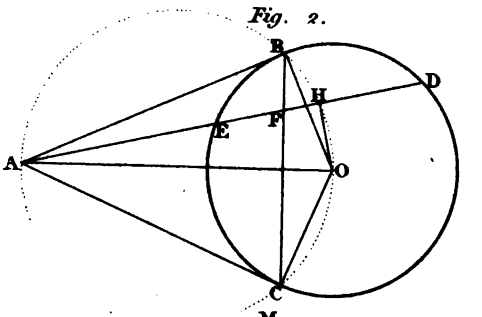


Fig. 13.



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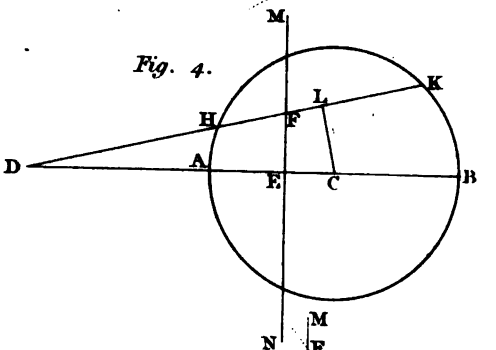

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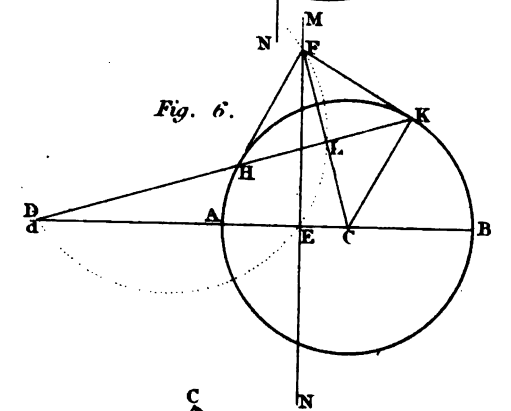

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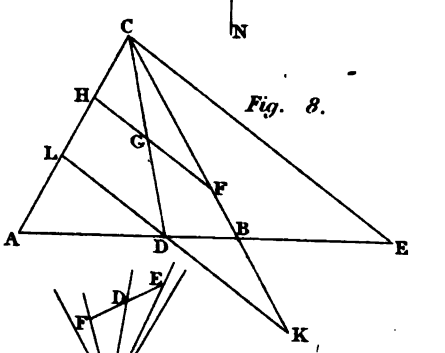

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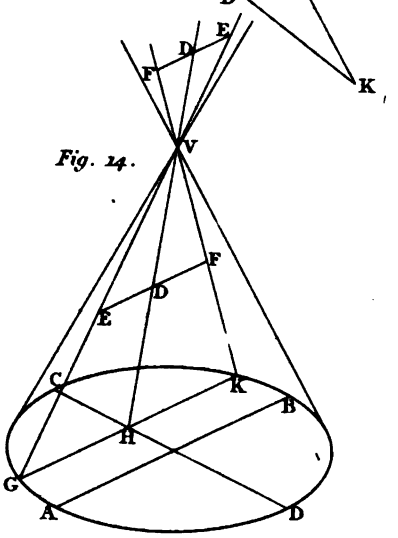

Fig. 14.

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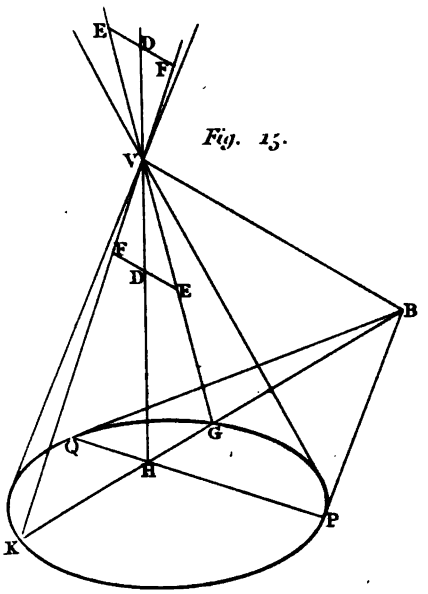

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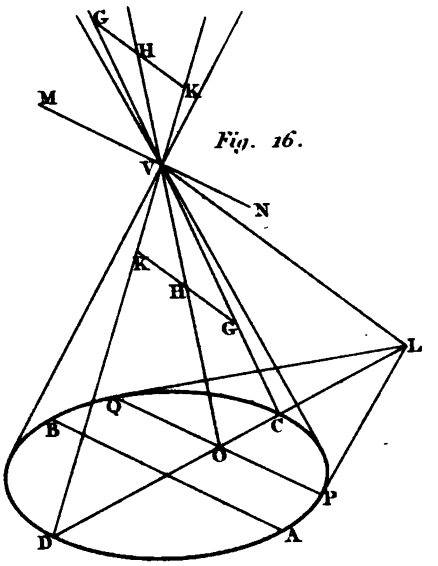

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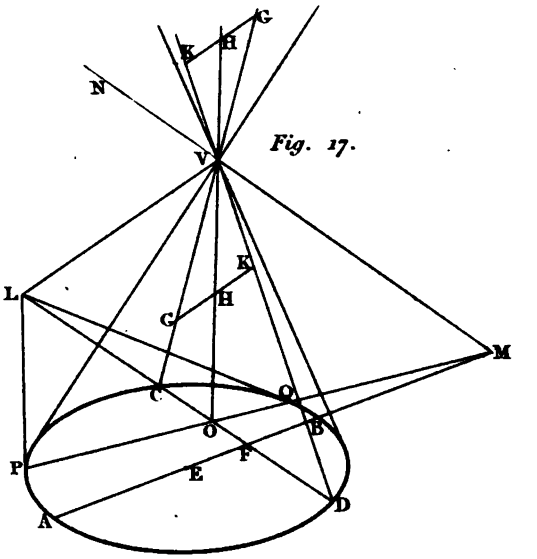

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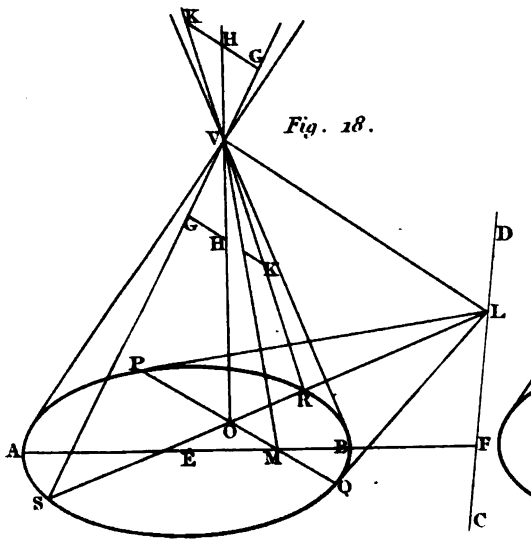

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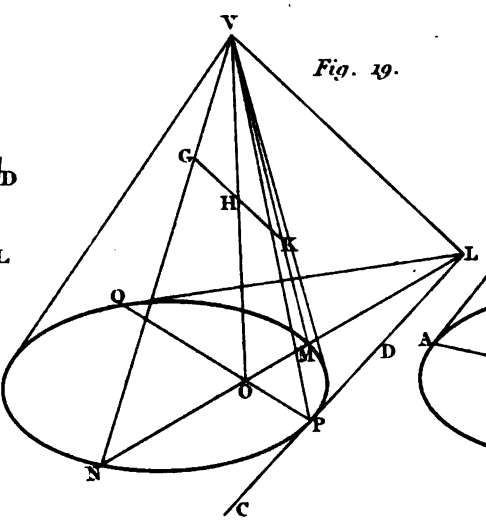

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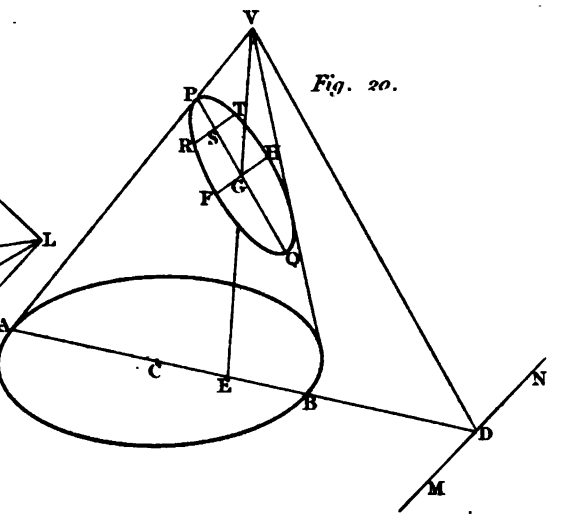

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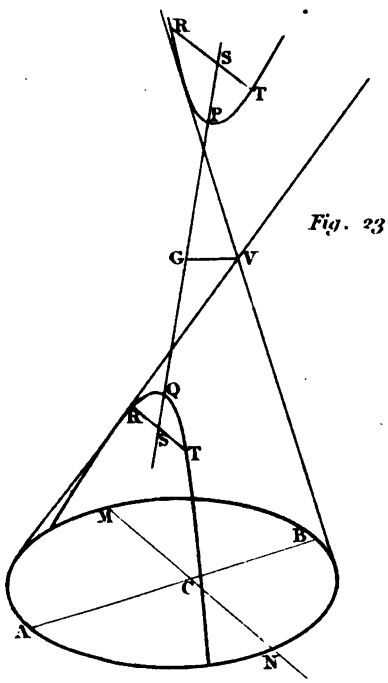

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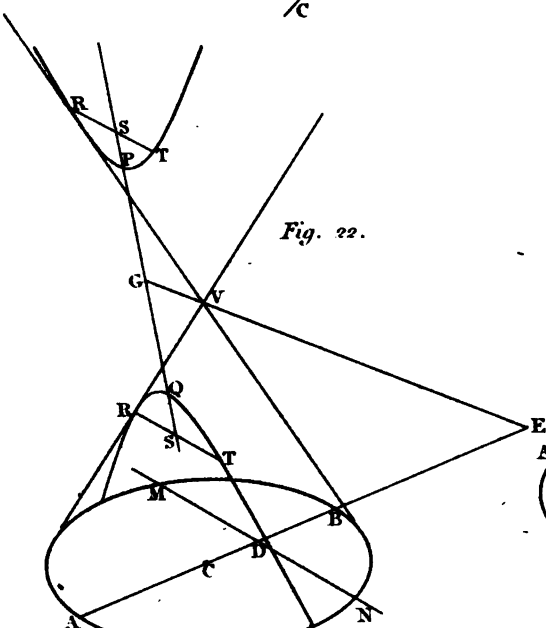

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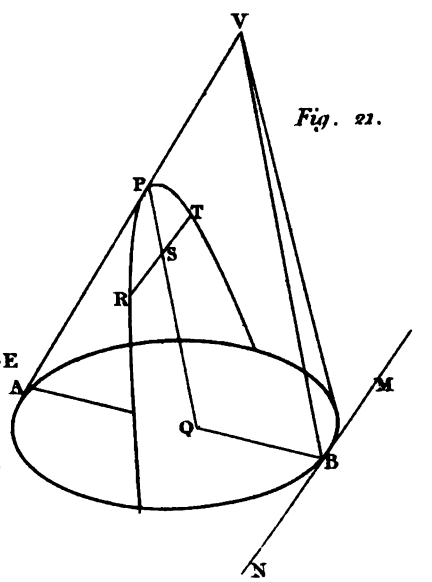

Fig. 21.

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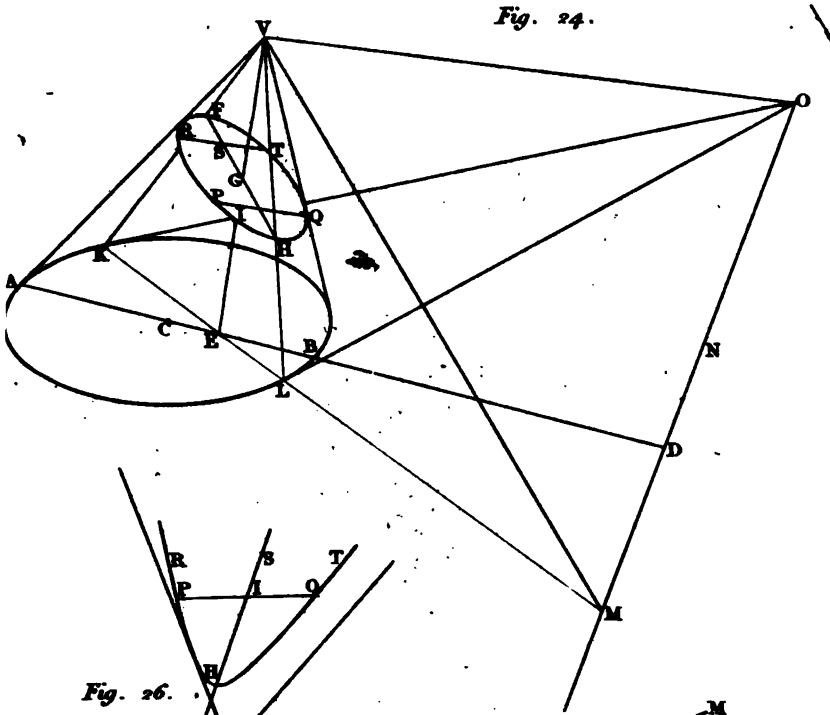
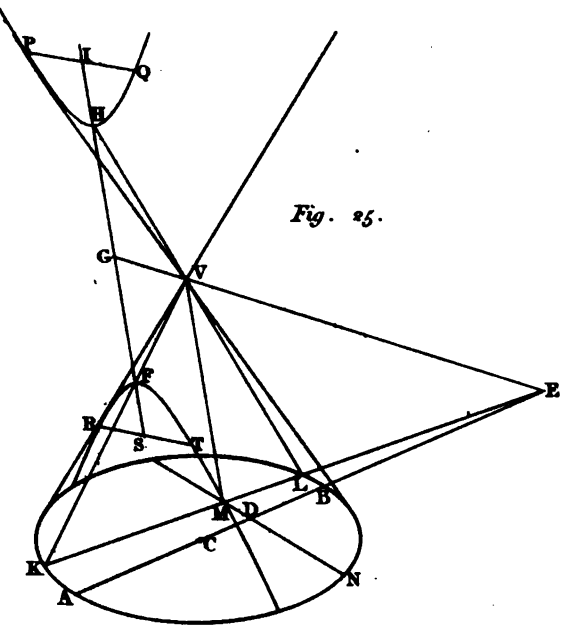
Fig. 24.





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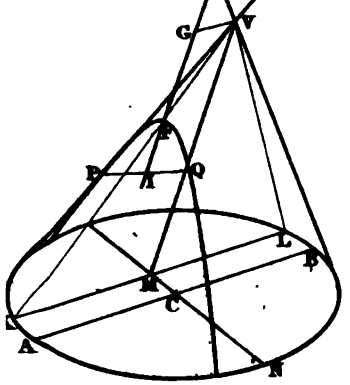

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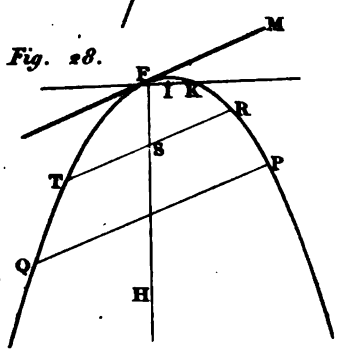

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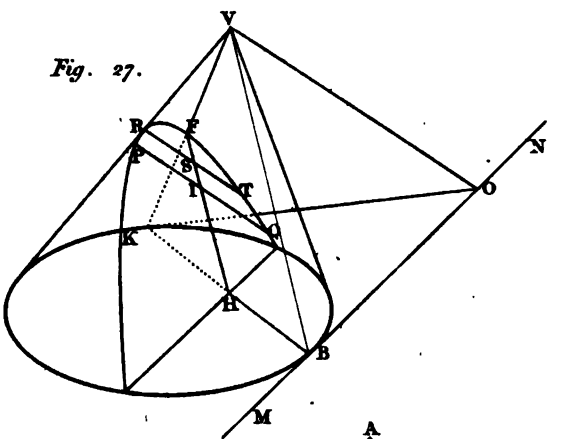

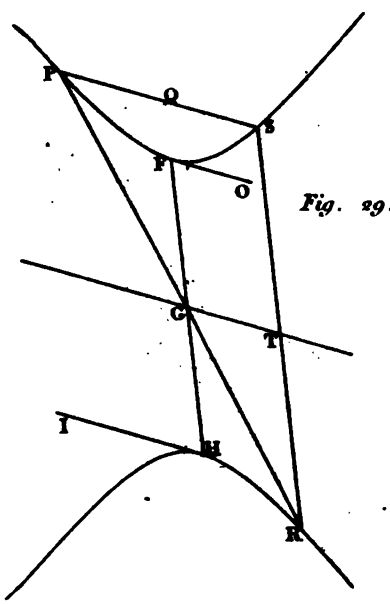

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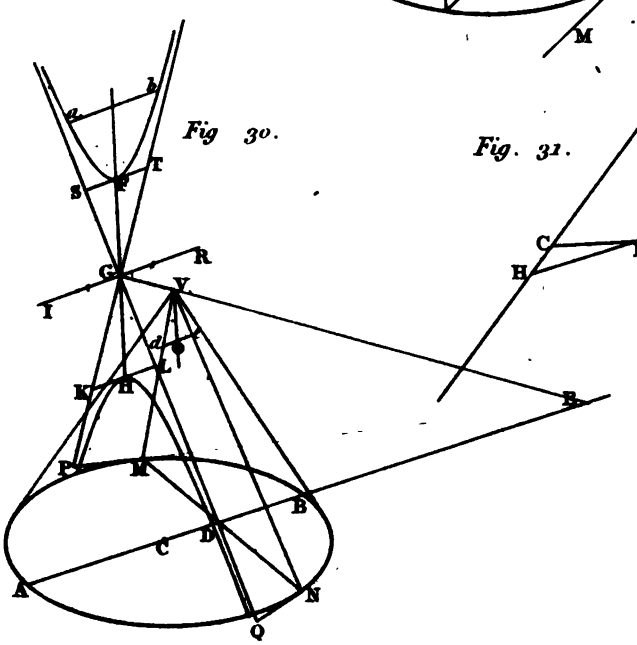

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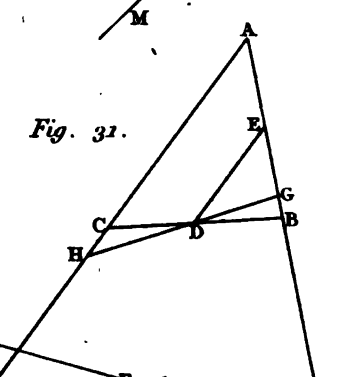

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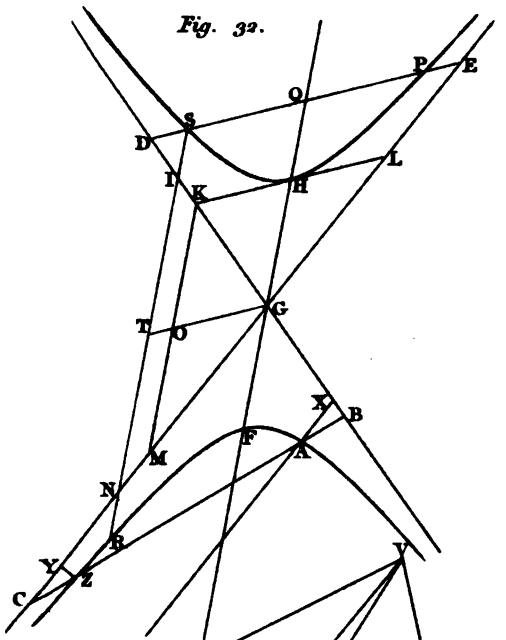

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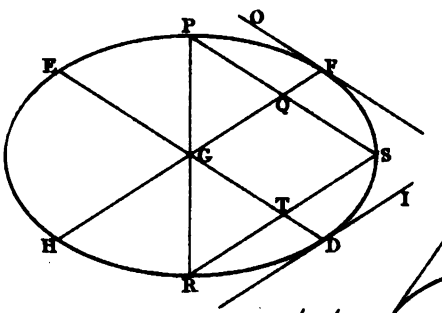

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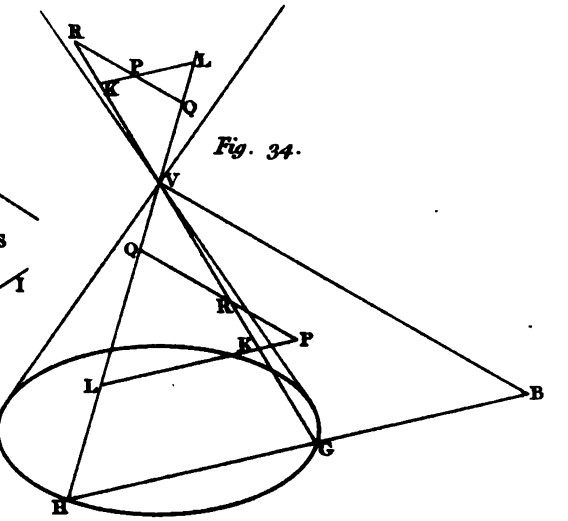

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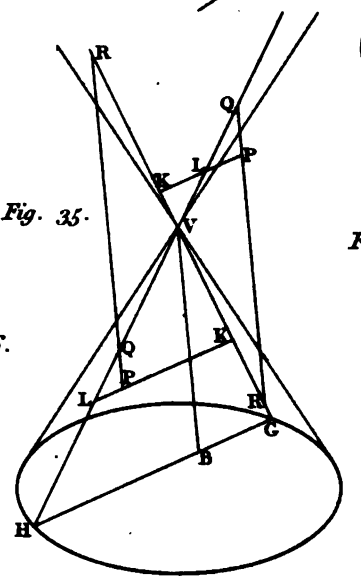

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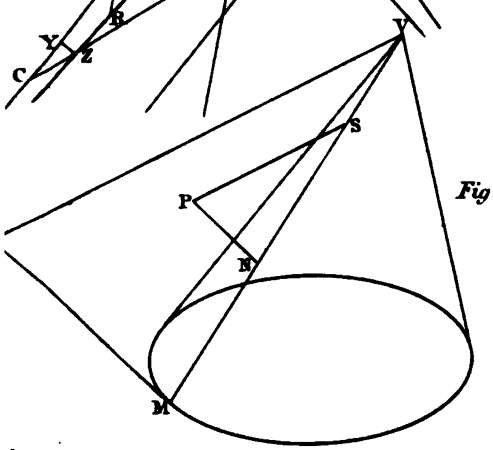

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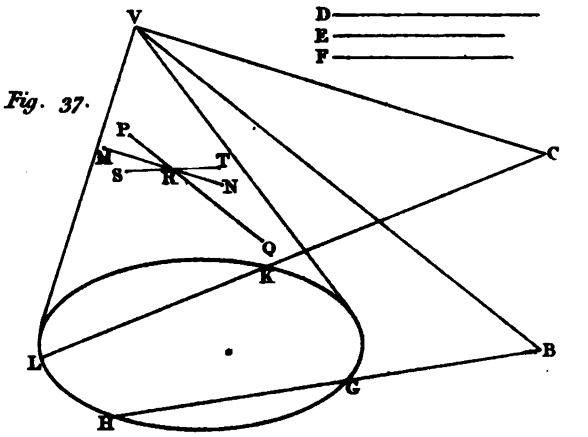

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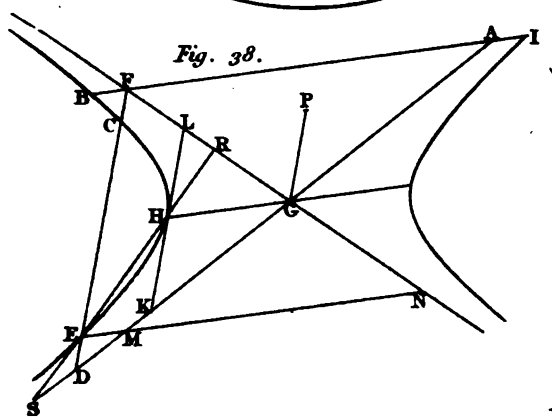

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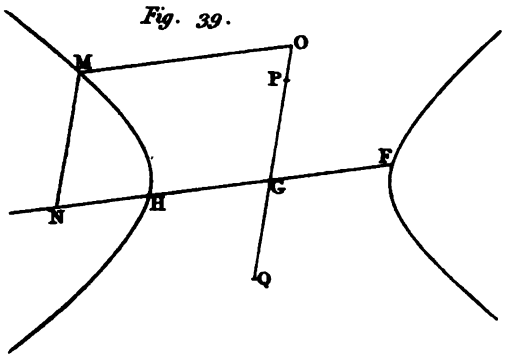

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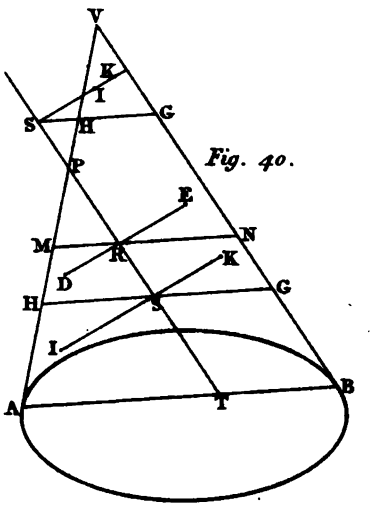

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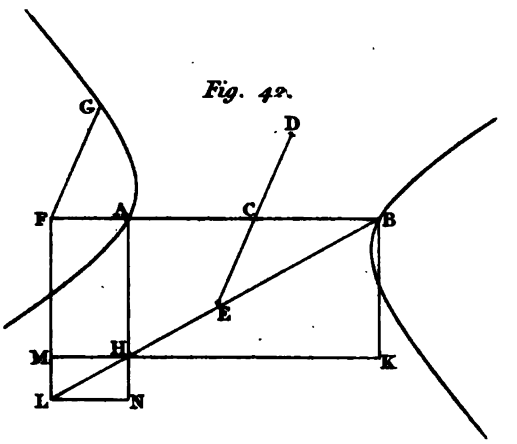

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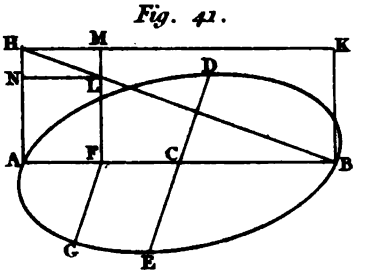

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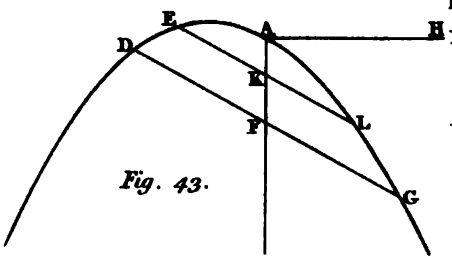

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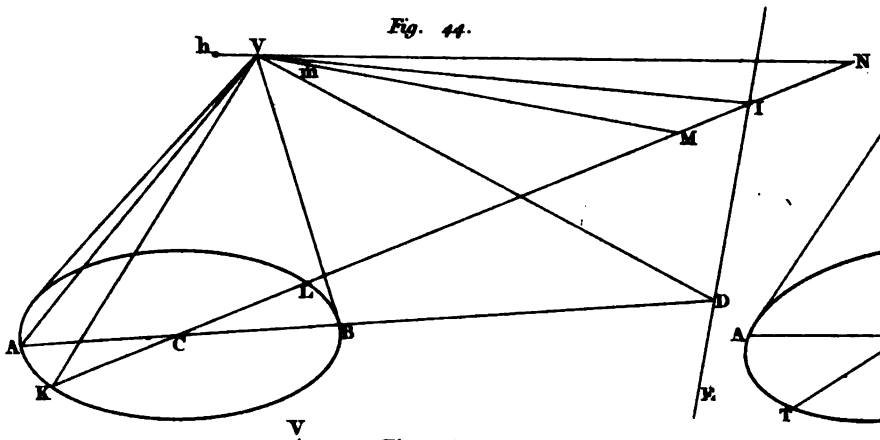

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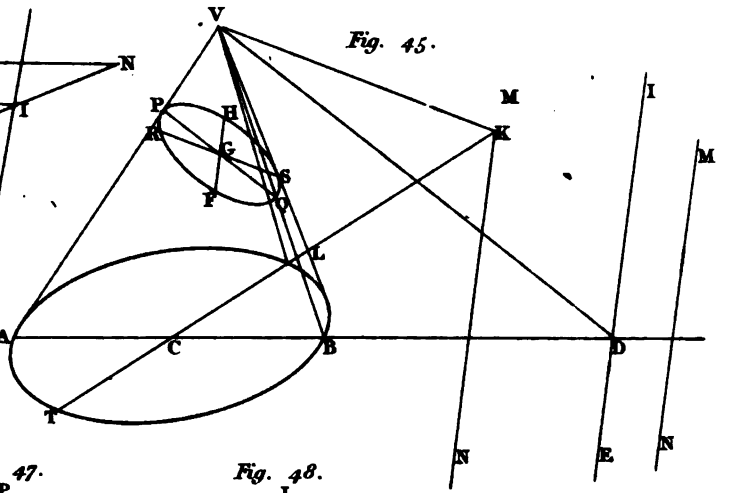

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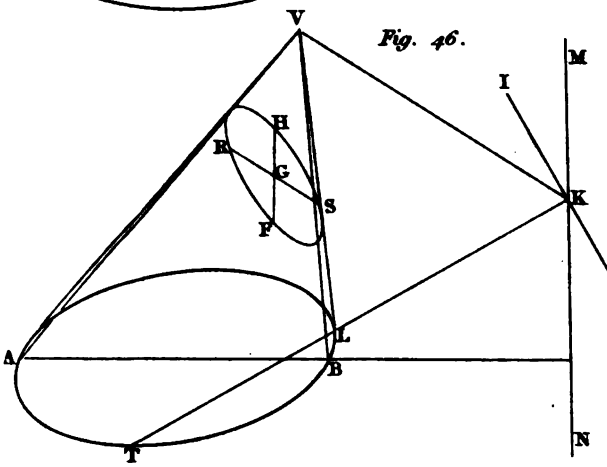

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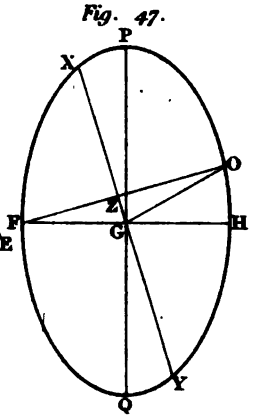

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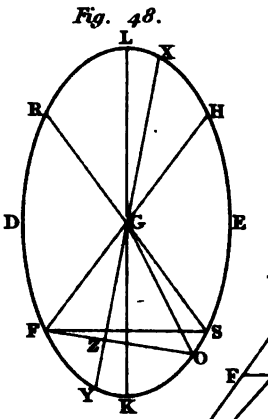

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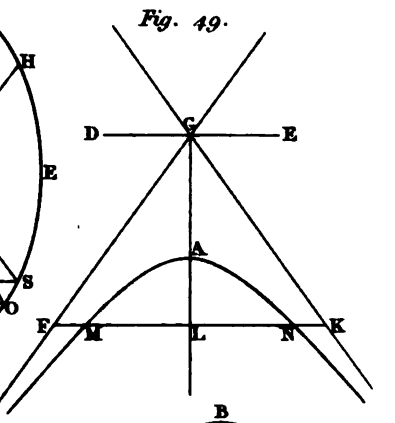

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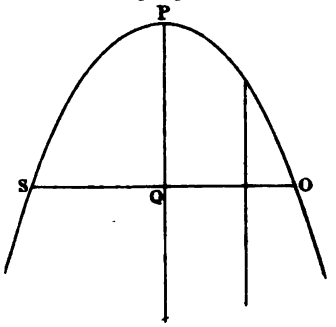

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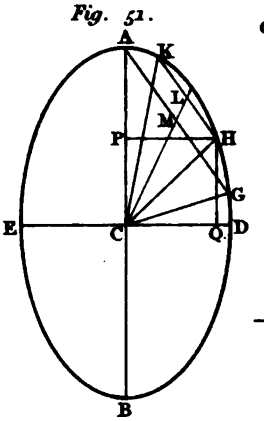

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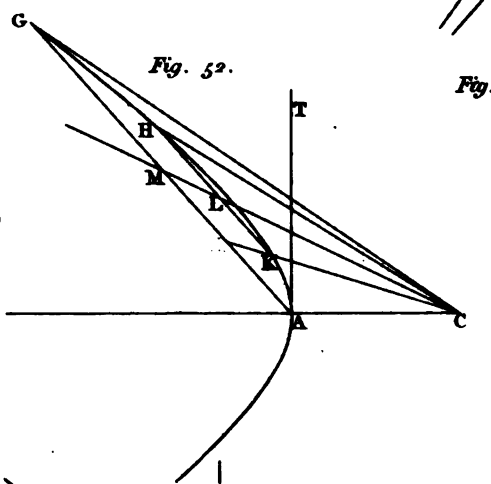

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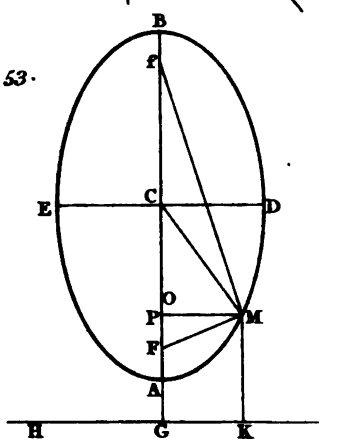

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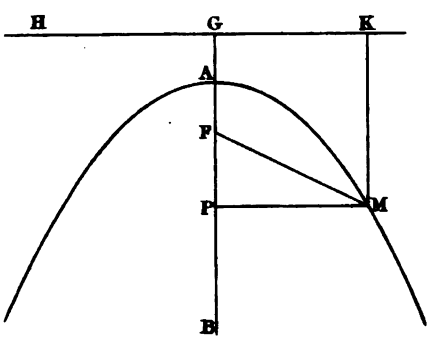

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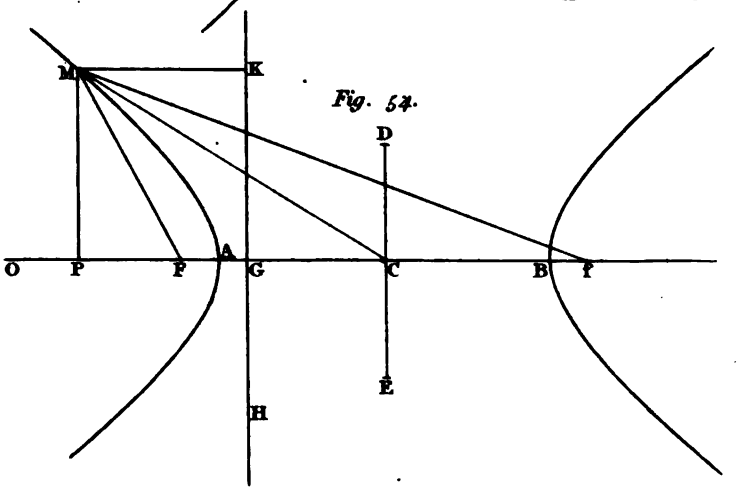

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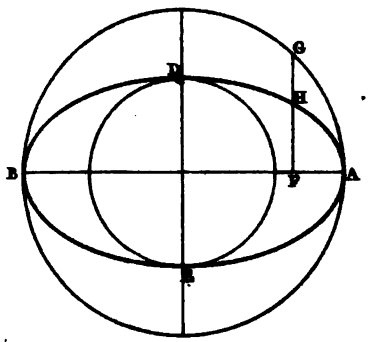
CONICS.
ELLIPSE.

Fig. 1.



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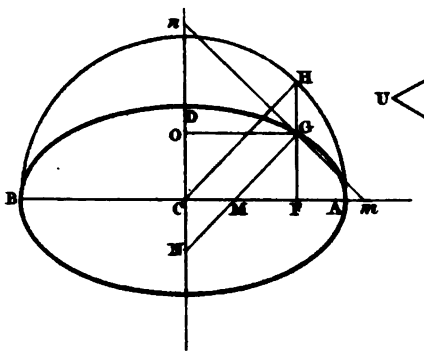

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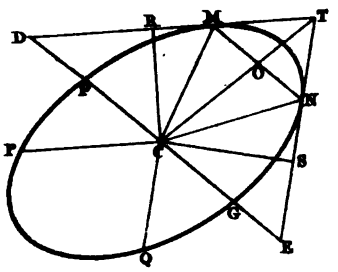

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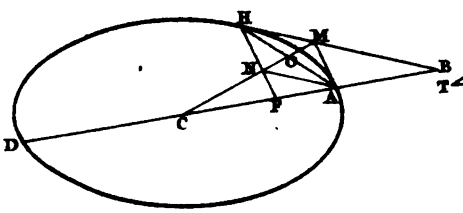

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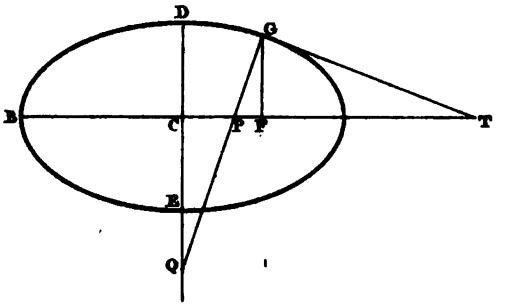

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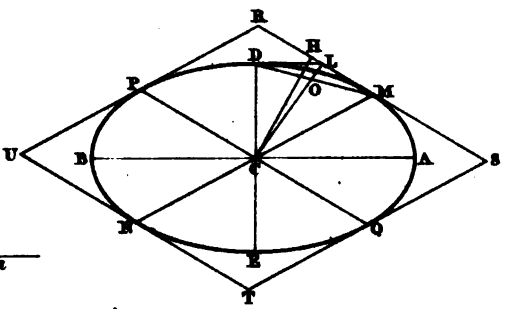

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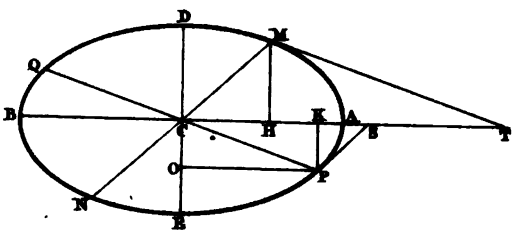

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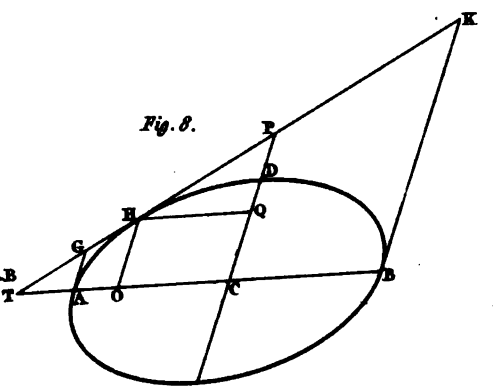
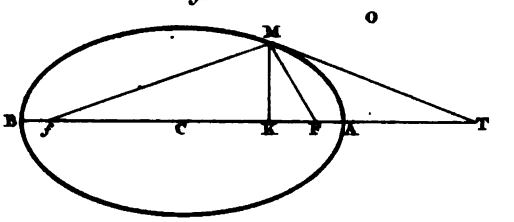


Fig. 9.



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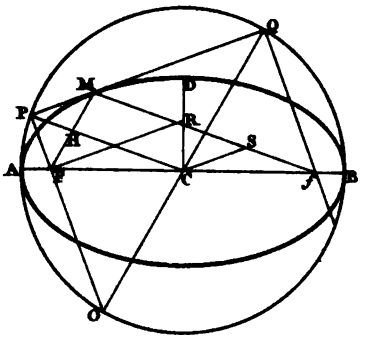

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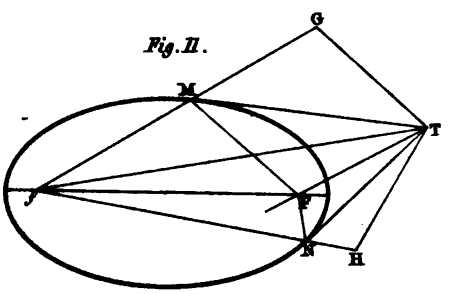

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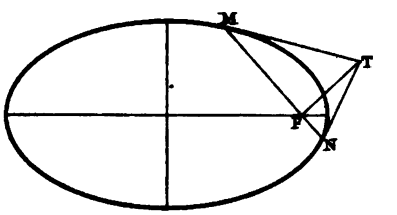

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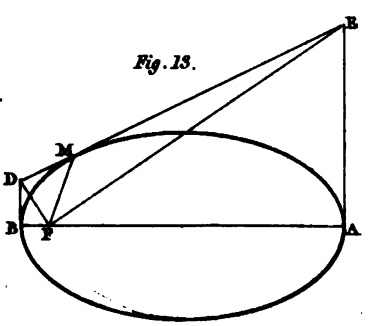

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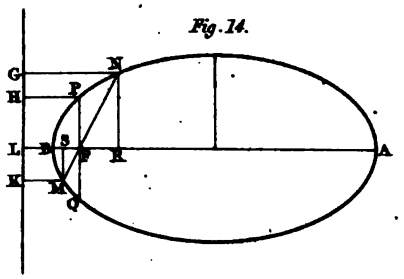
CONICS.

ELLIPSE.

Fig. 14.



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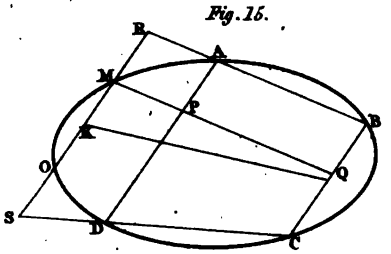

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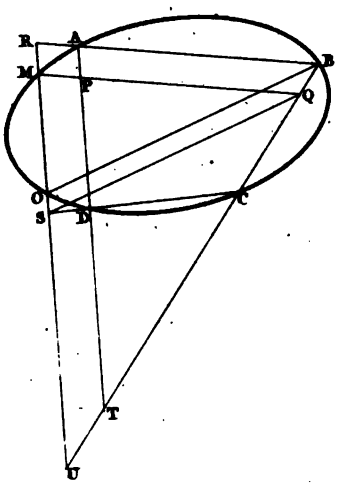

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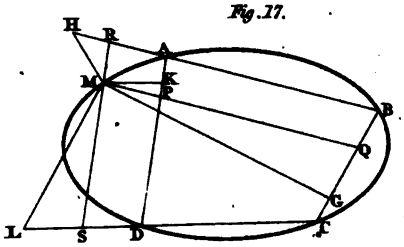

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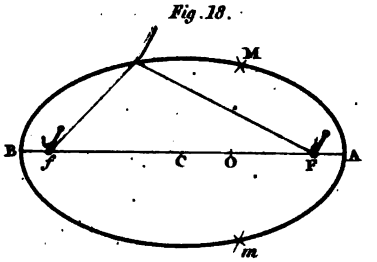

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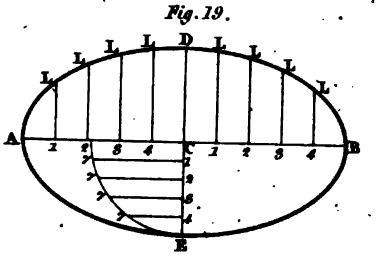

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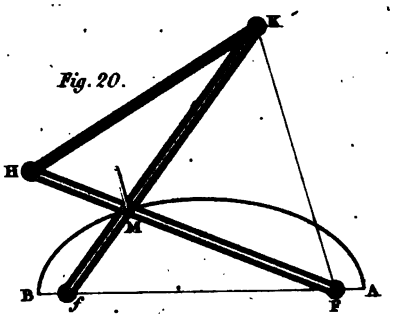

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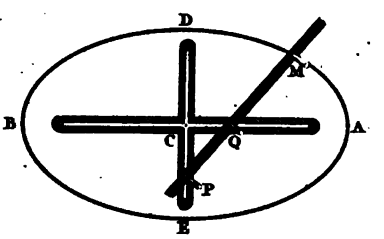

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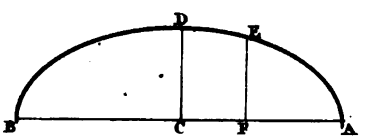

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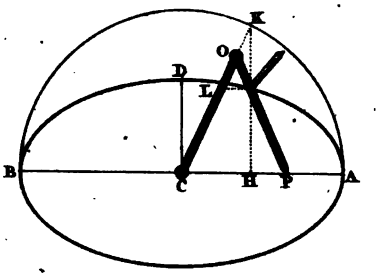

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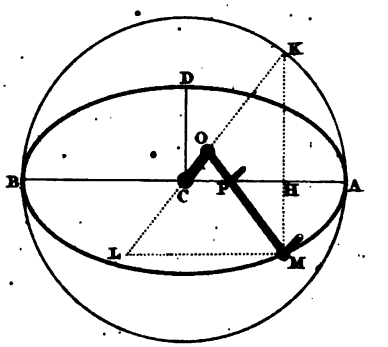

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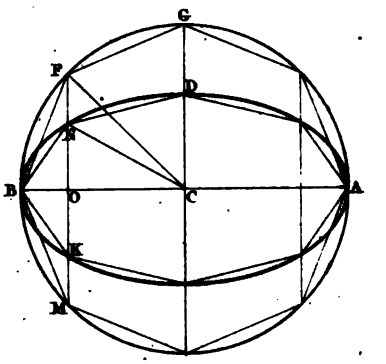

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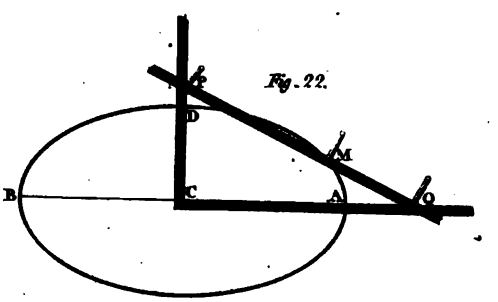

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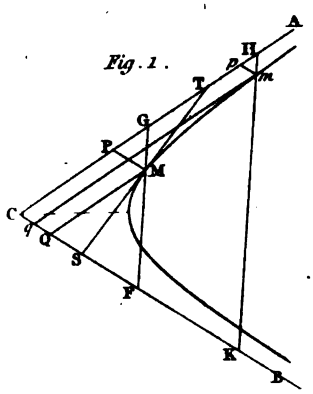
CONICS.

HYPERBOLA.

Fig. 1.



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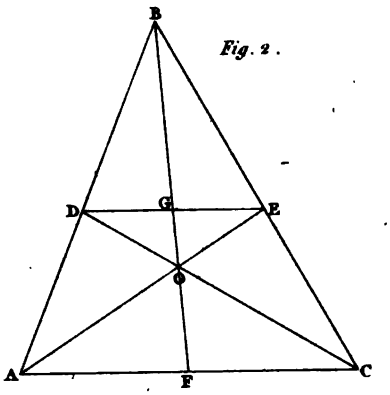

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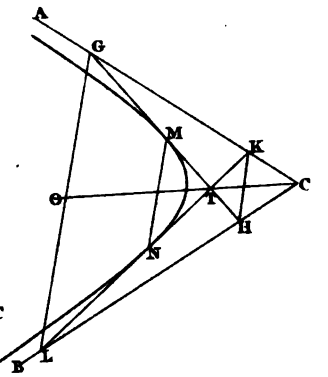

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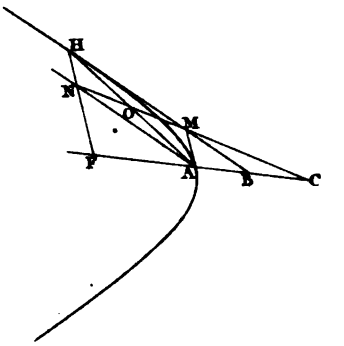

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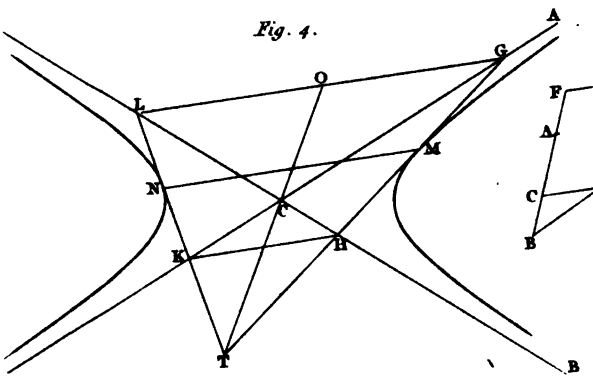

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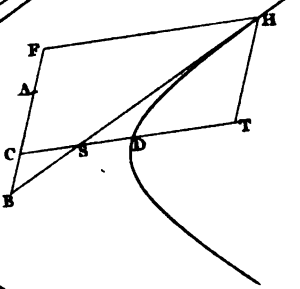

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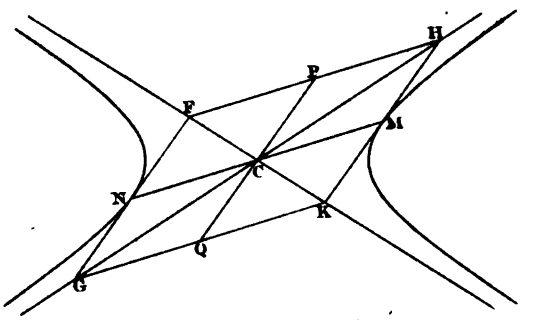

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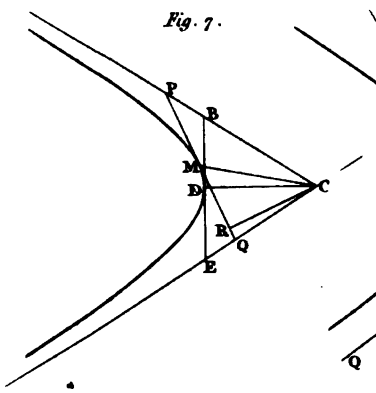

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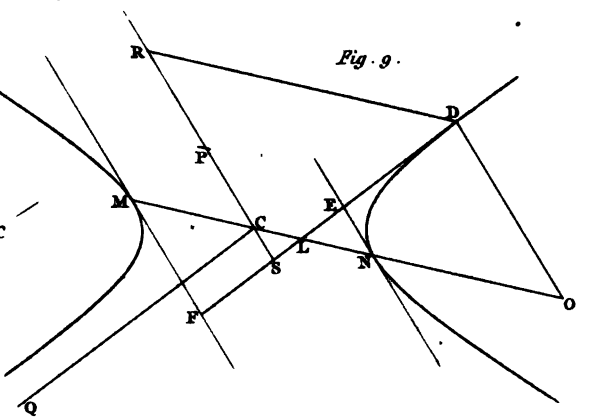

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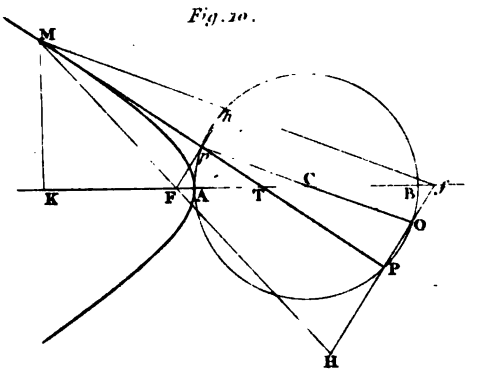

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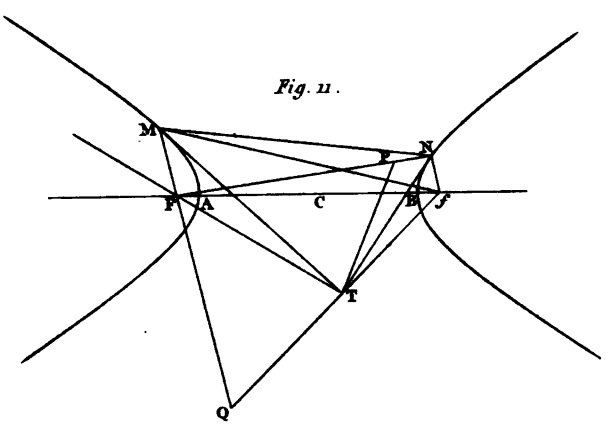

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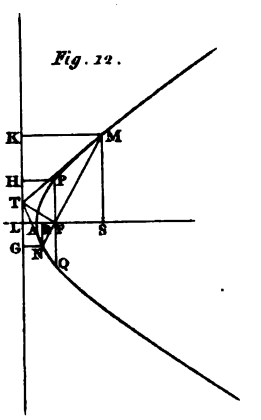

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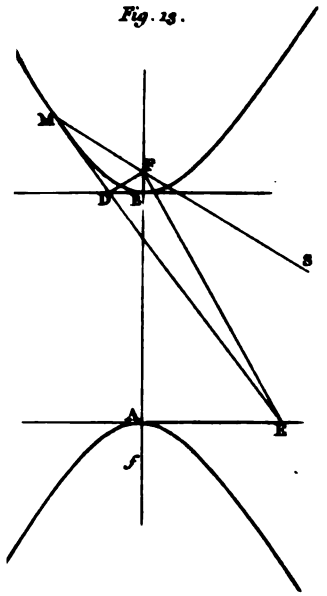
HYPERBOLA.

Fig. 13.



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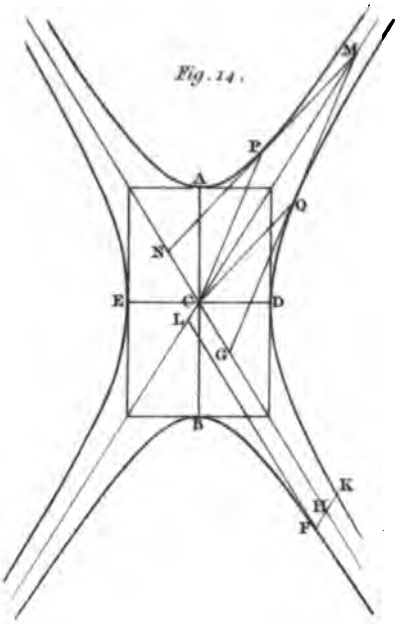

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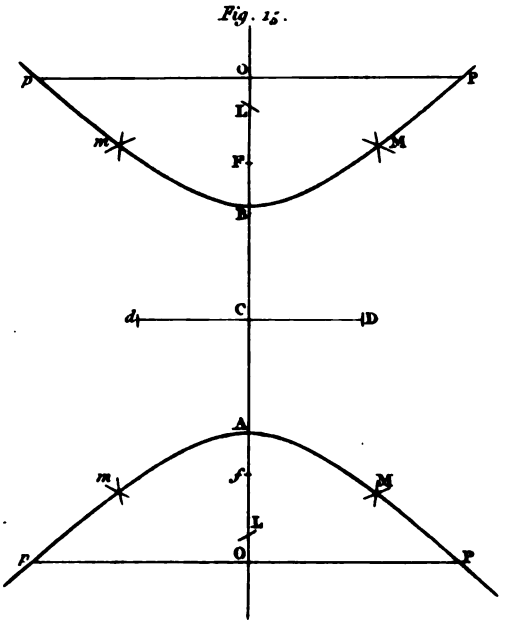

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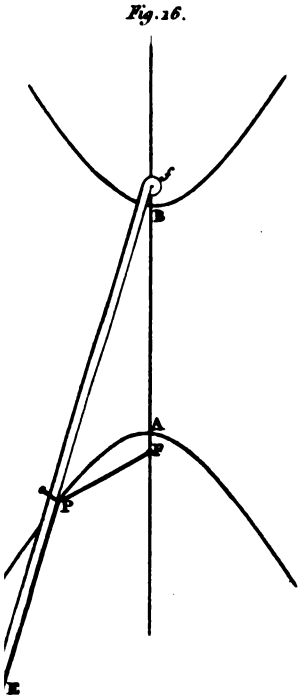

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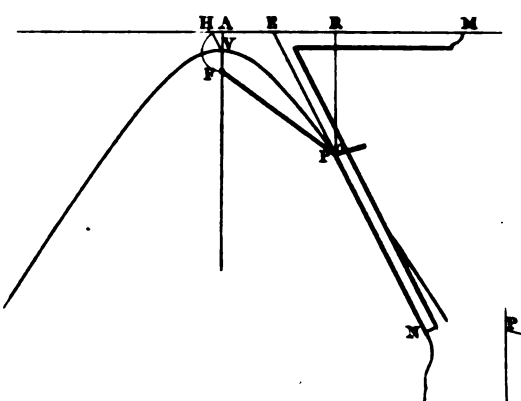

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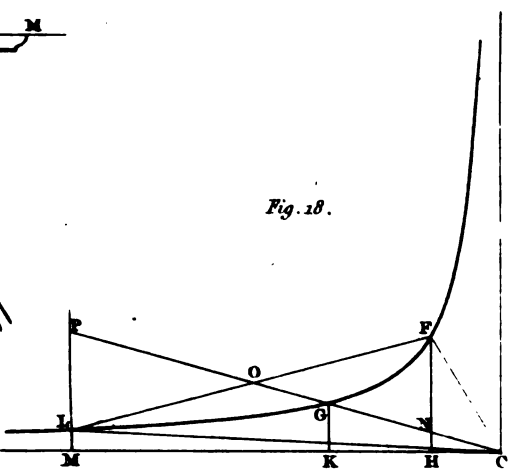

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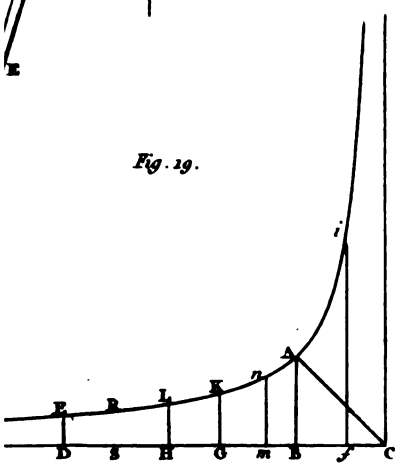

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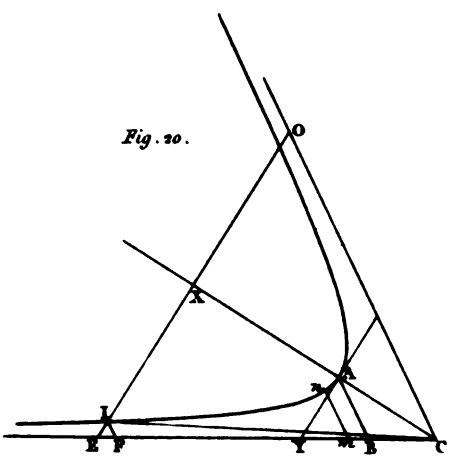

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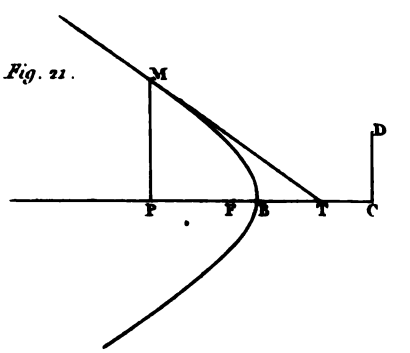

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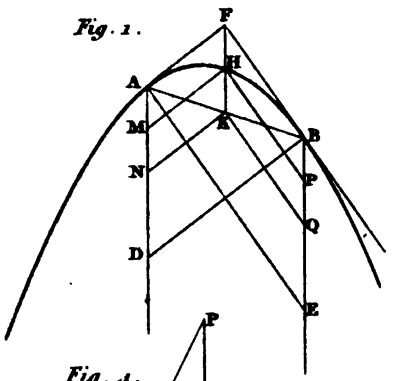
PARABOLA.

Fig. 1.



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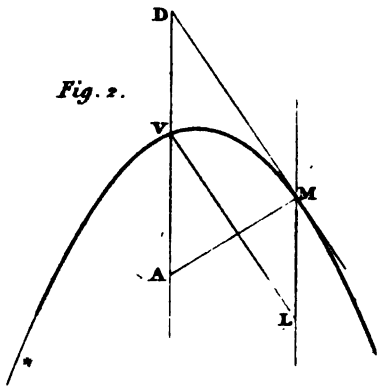

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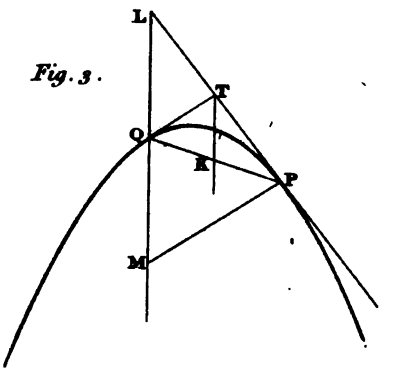

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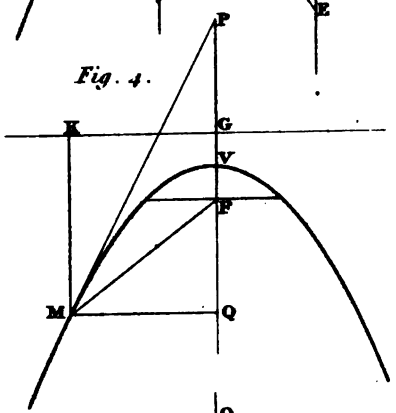

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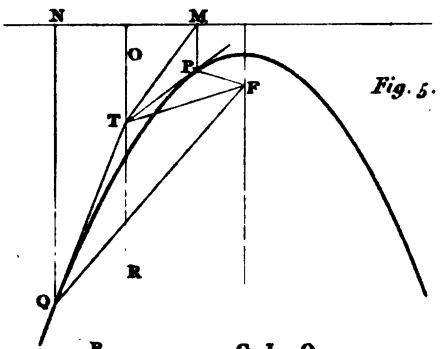

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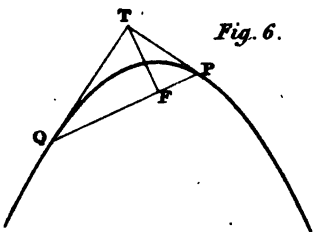

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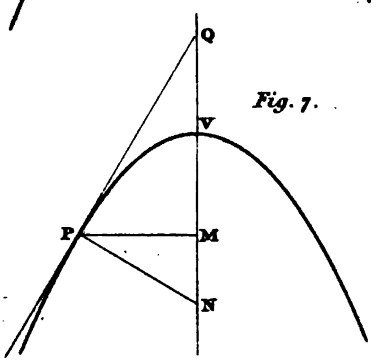

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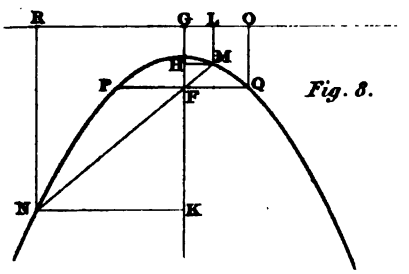

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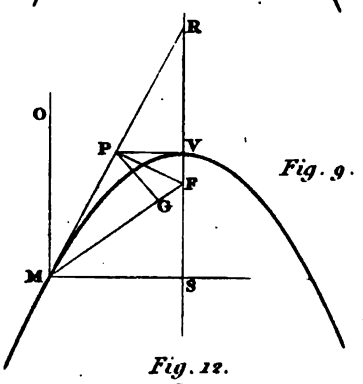

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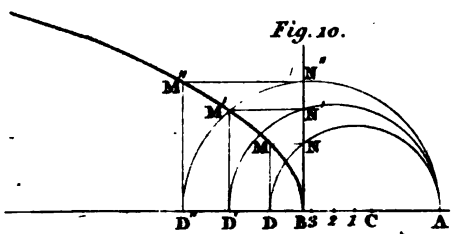

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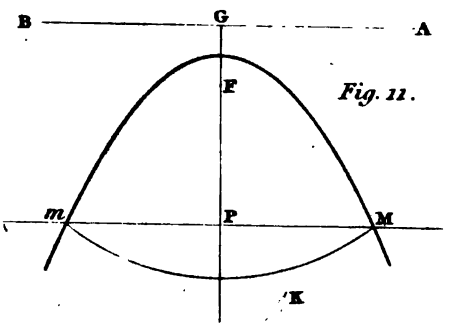

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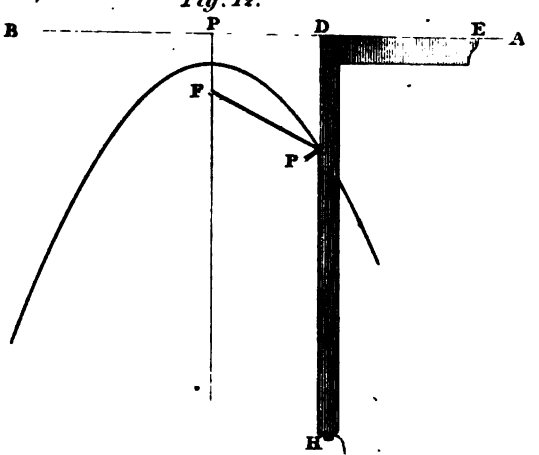

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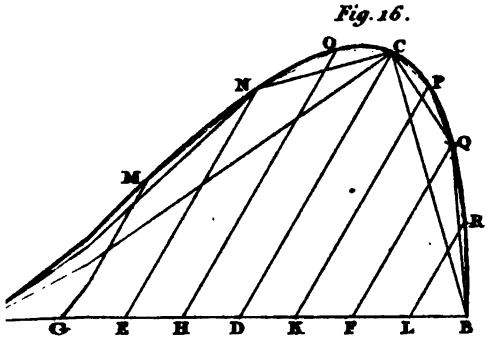

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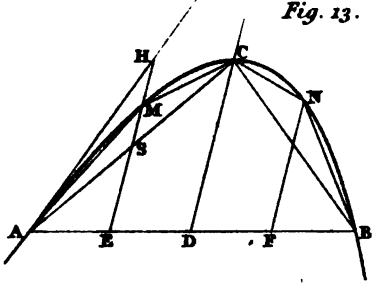

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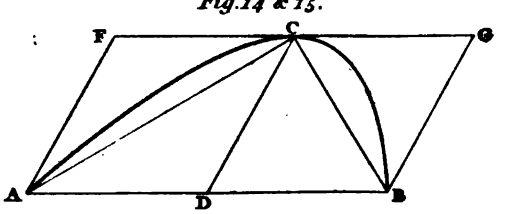

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Lowry Sculp.

COTTON MANUFACTURE.

PLATE I.

CALICO PRINTING.

Fig.1.

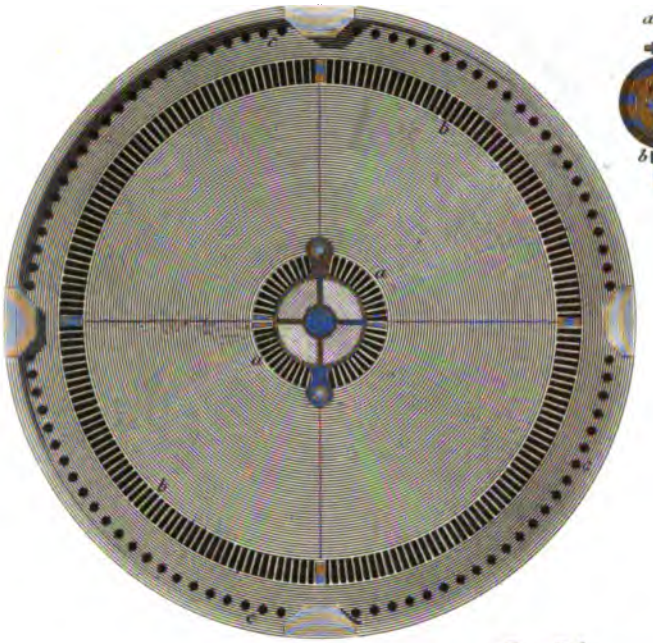


Fig.6.

Fig.2.

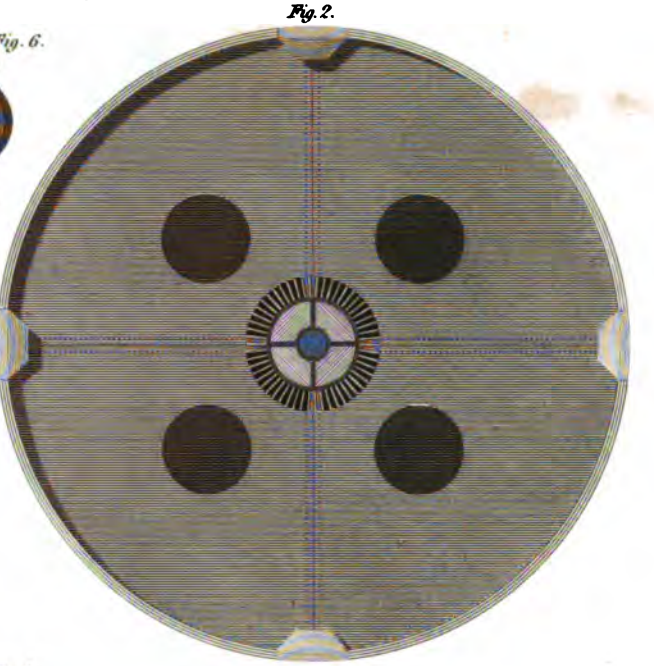


Fig.5.

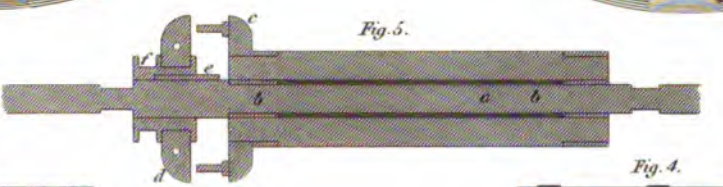


Fig.3.

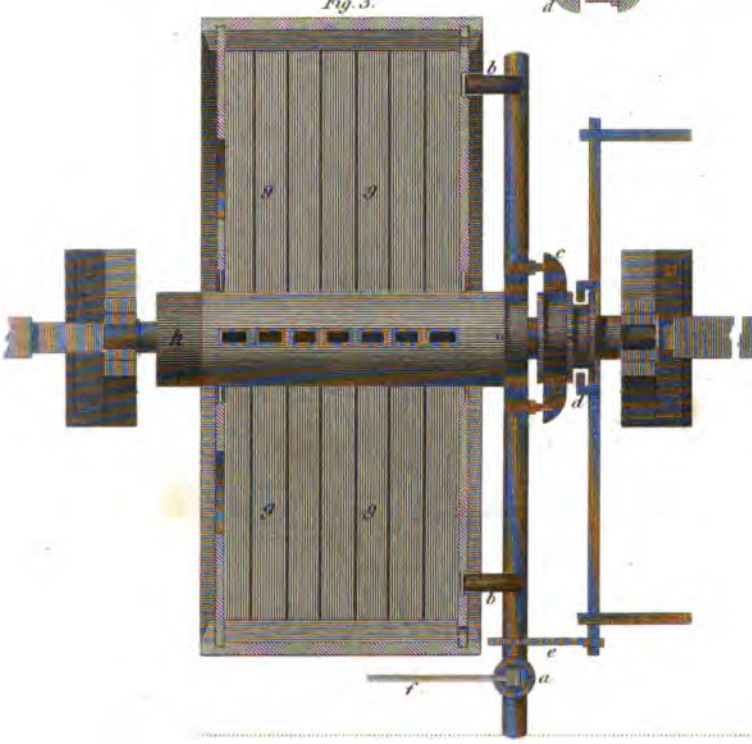
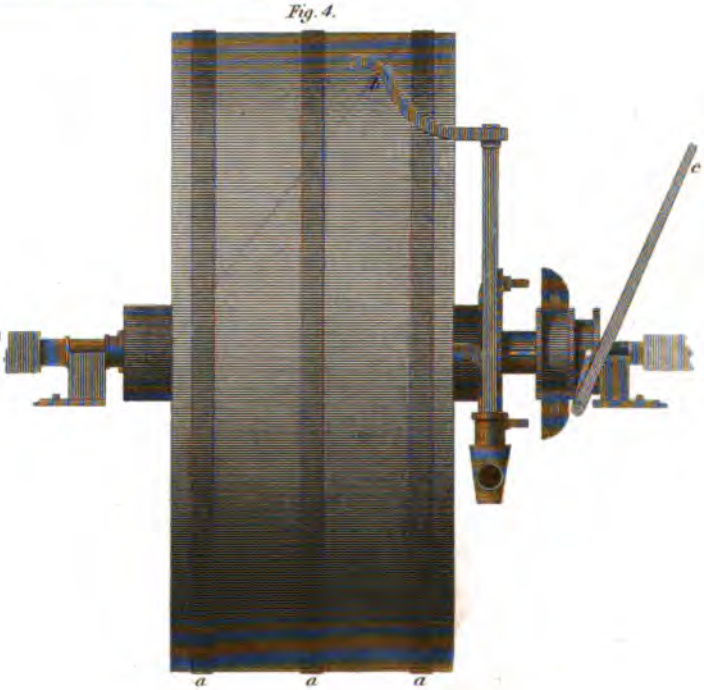


Fig.4.

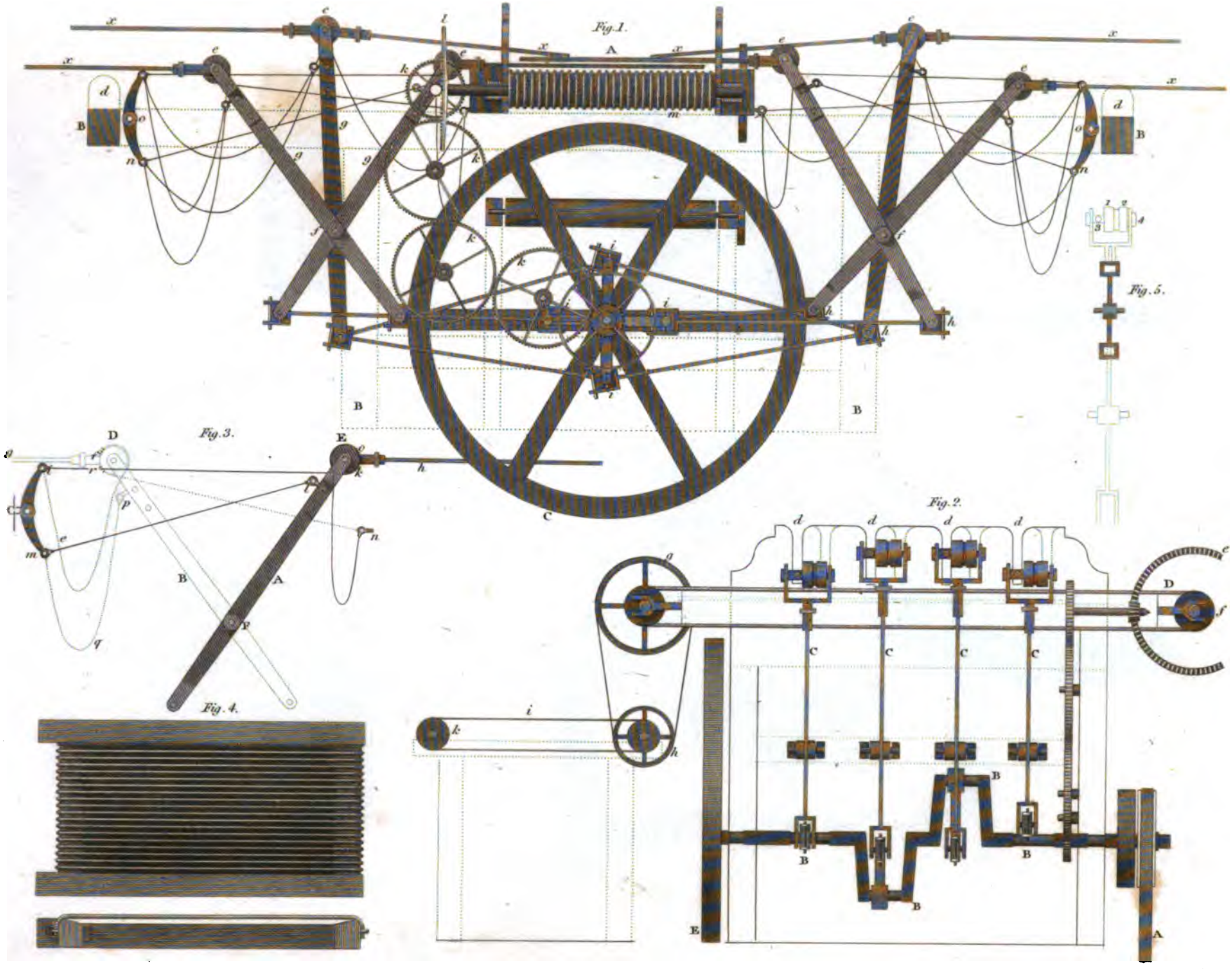


by Wm. Thomson.

Published as the Act directs, 1809, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

BATTING MACHINE.



Drawn by J.s Burton.

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DEVILING.

Fig. 6.

Fig. 3.

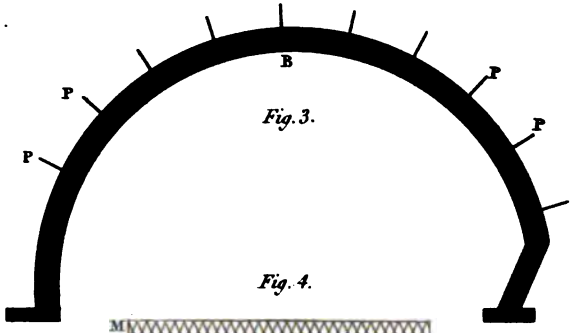
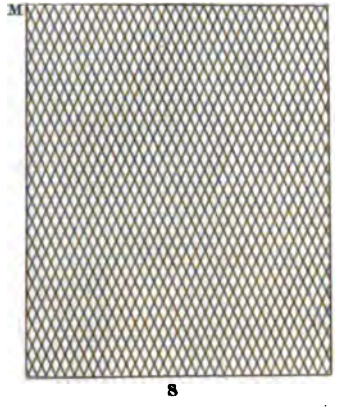


Fig. 4.



Plan

Fig. 1.

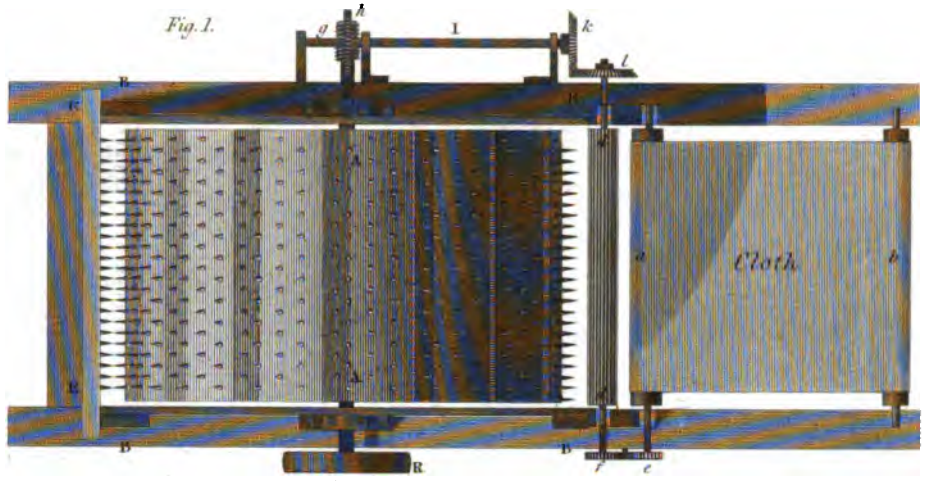
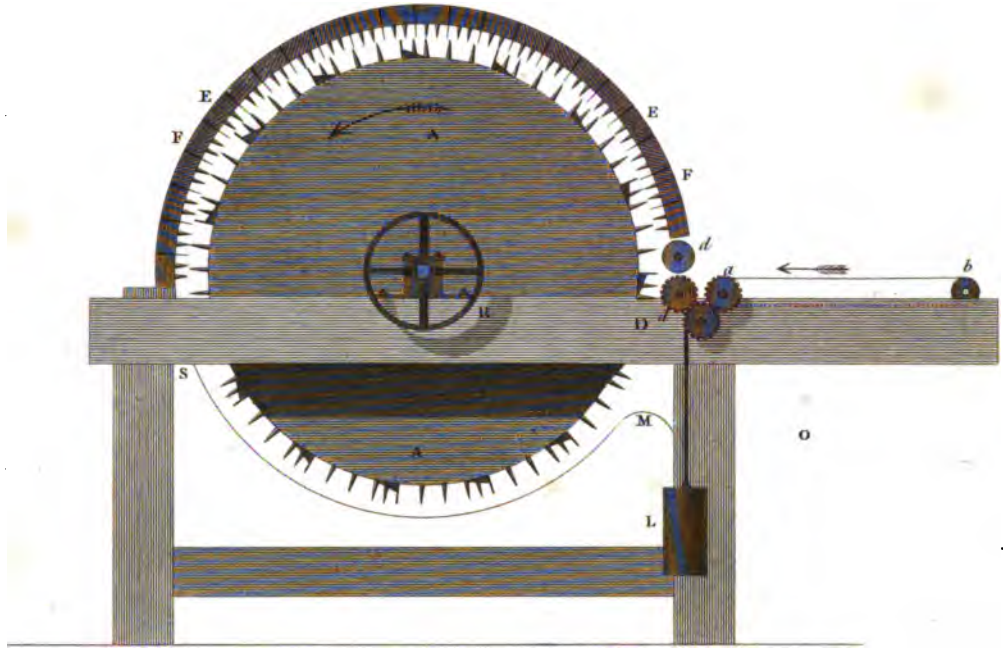


Fig. 2.

Section.



Drawn by James Burton.

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Engraved by Wilson Lowry.

CARDING.

Fig. 4.

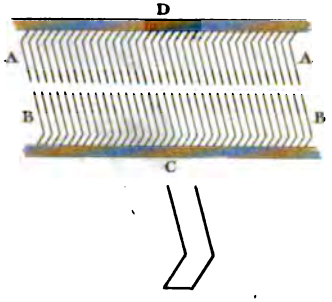


Fig. 1. Plan

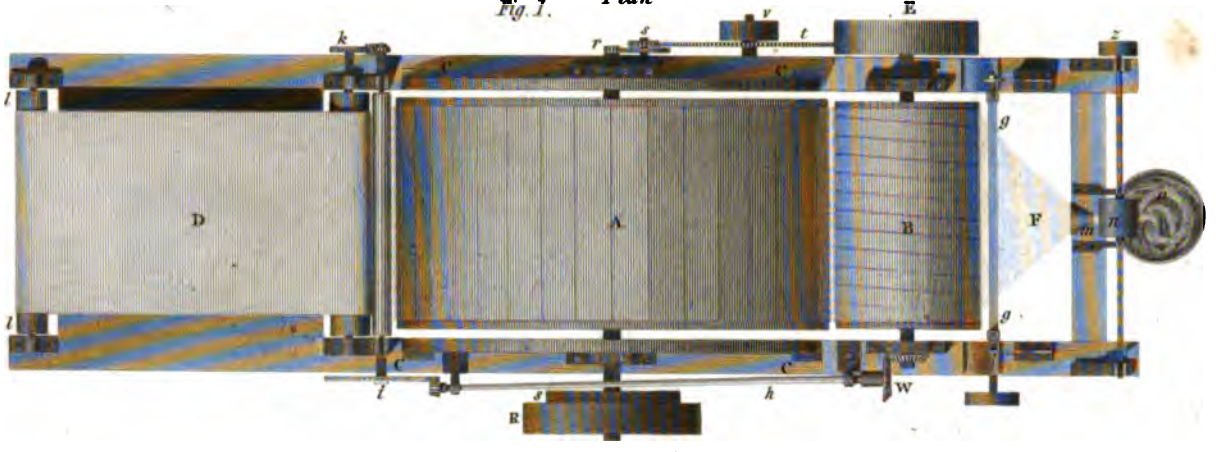


Fig. 3.

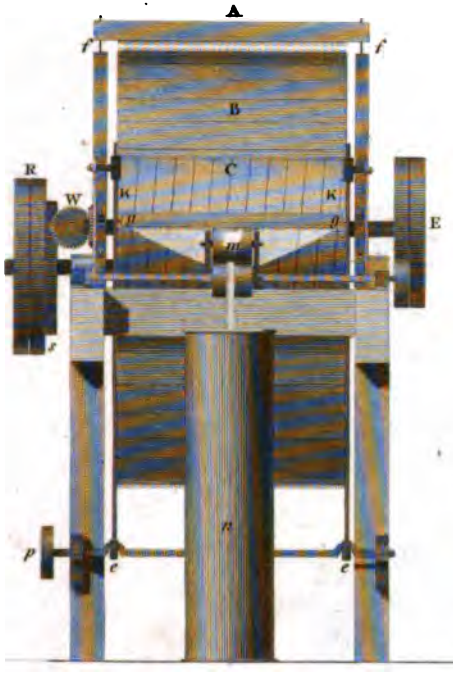
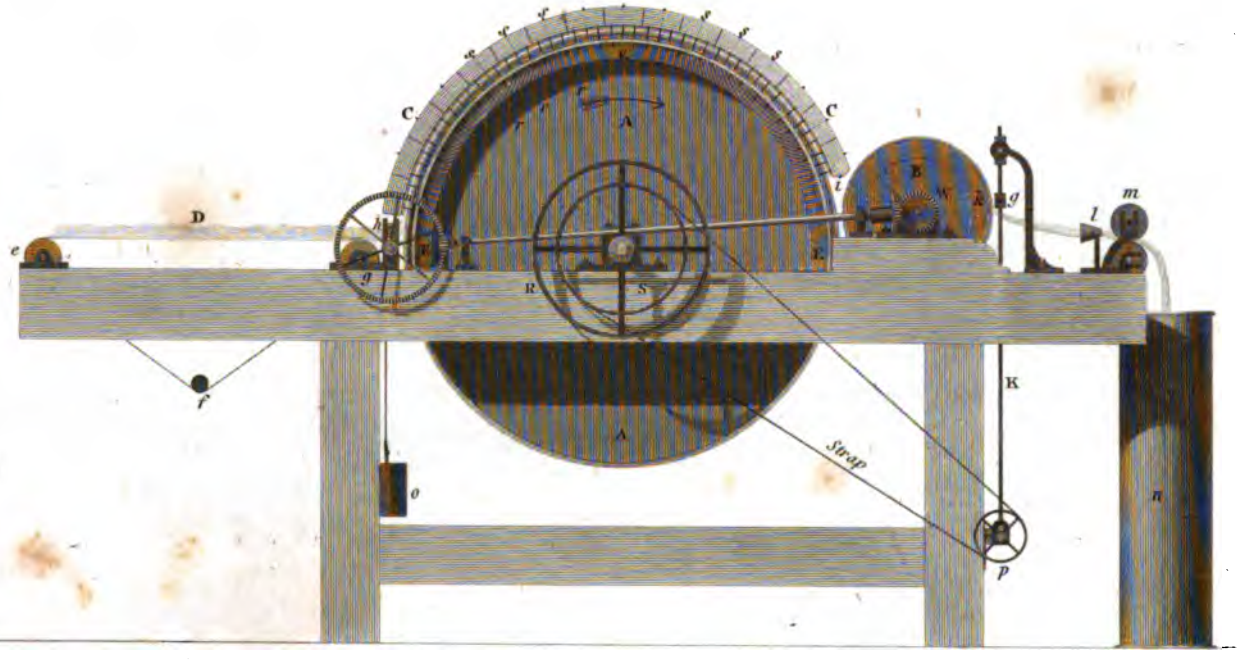


Fig. 2. Section



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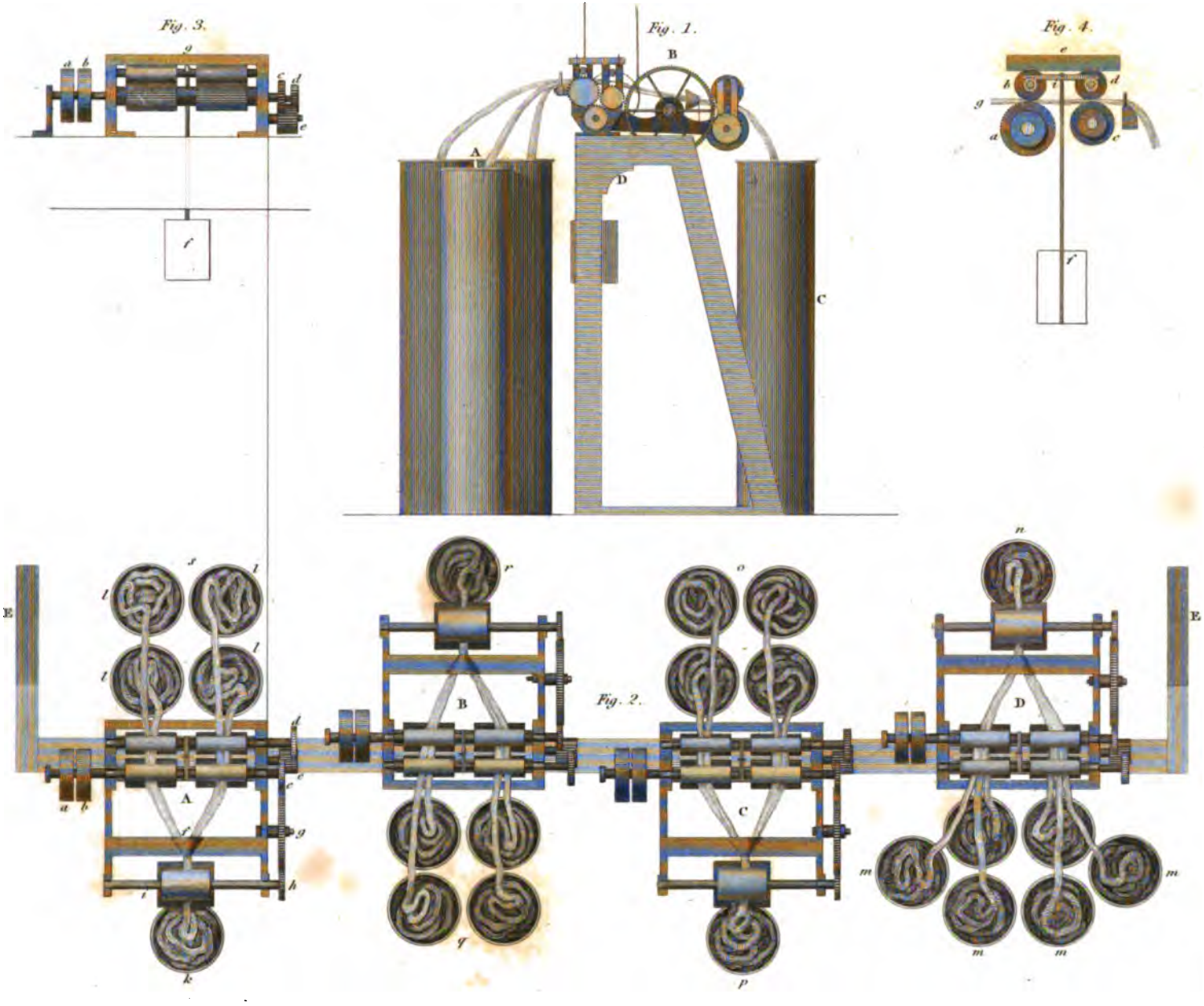
DRAWING FRAME.



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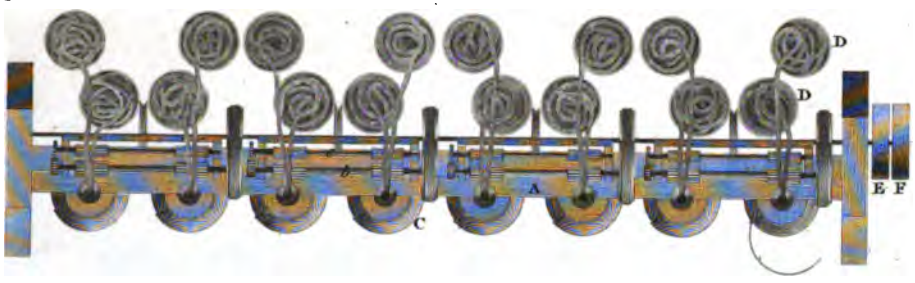
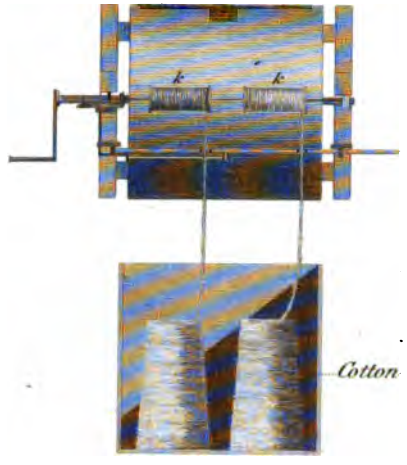
COTTON MANUFACTURE.

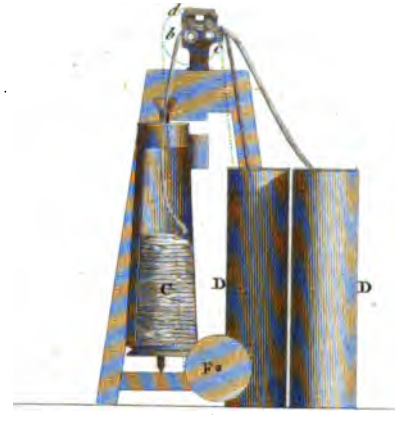
ROVING CAN FRAME.



Winding Block



A *Roller beam.*
b Front Roller.
c Back Roller.
d Top front Roller.
C *Revolving Can.*
W *Roller weights.*
P *Can Pulley.*
DD *Back Cans.*
E *Driving Pulley.*
F *Loose Pulley.*
NN *Can Funnels.*
L *Clearer.*
p Front roller Pulley.
k k Bobbins.



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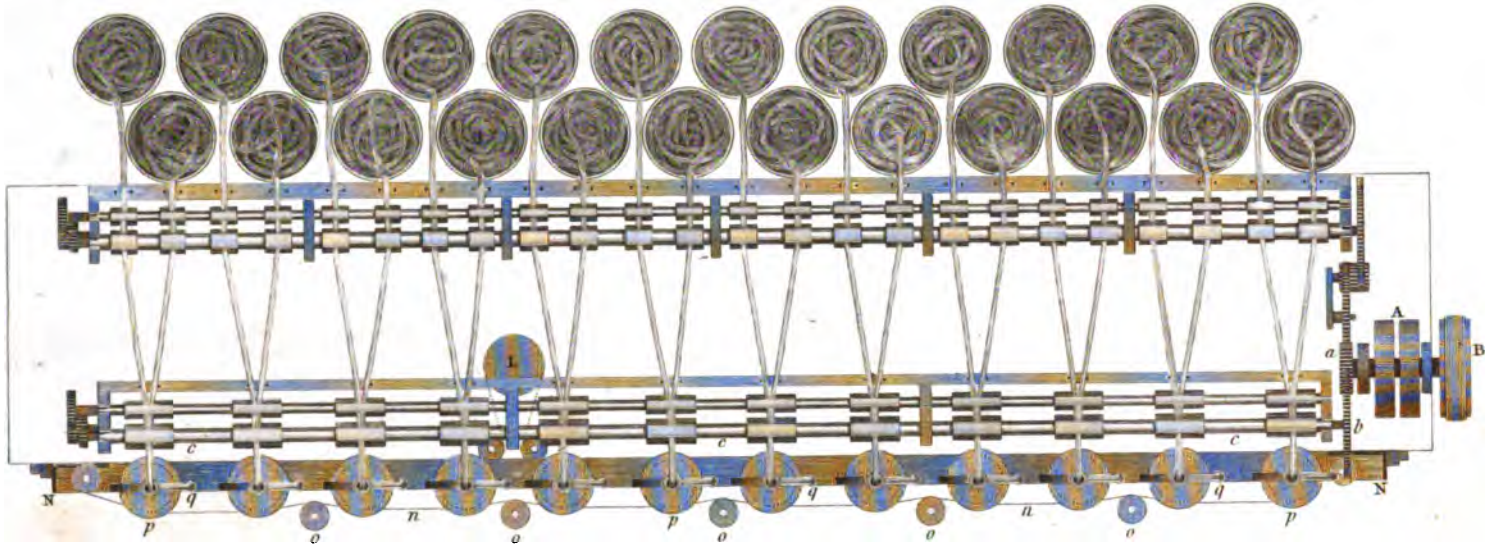
Engraved by Wilson Lowry.

COTTON MANUFACTURE.

ROVING FRAME, Plate 1st.

These cans contain the slivers brought from the Drawing frame.



Horizontal Plan of the Machine called Double Speeder.

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Engraved by Wilson Lowry.

COTTON MANUFACTURE.

ROVING FRAME termed *DOUBLE SPEEDER.*

Fig 1. Elevation in Front.

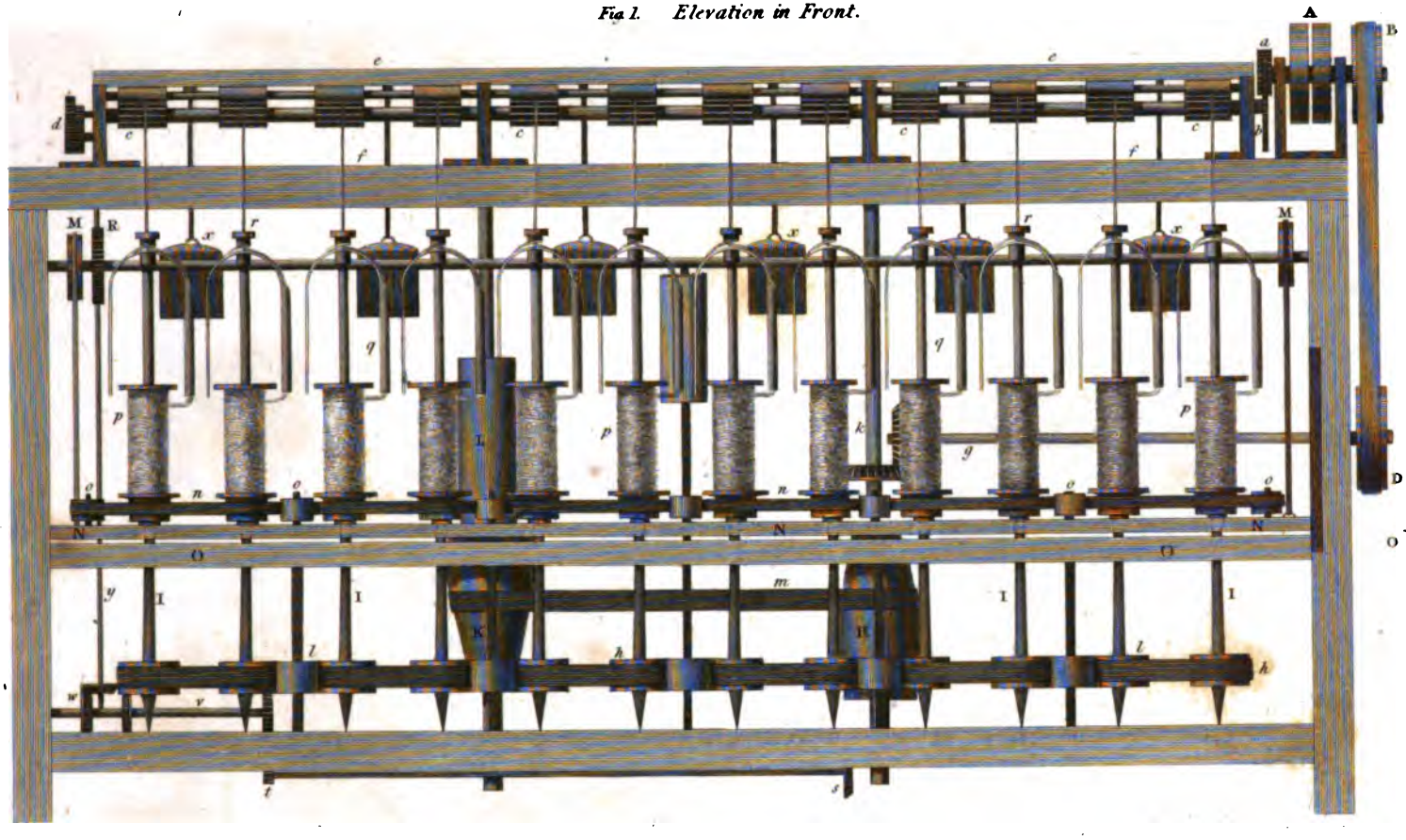
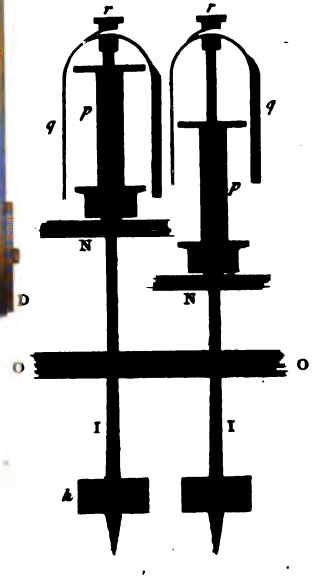


Fig. 2. & 3.



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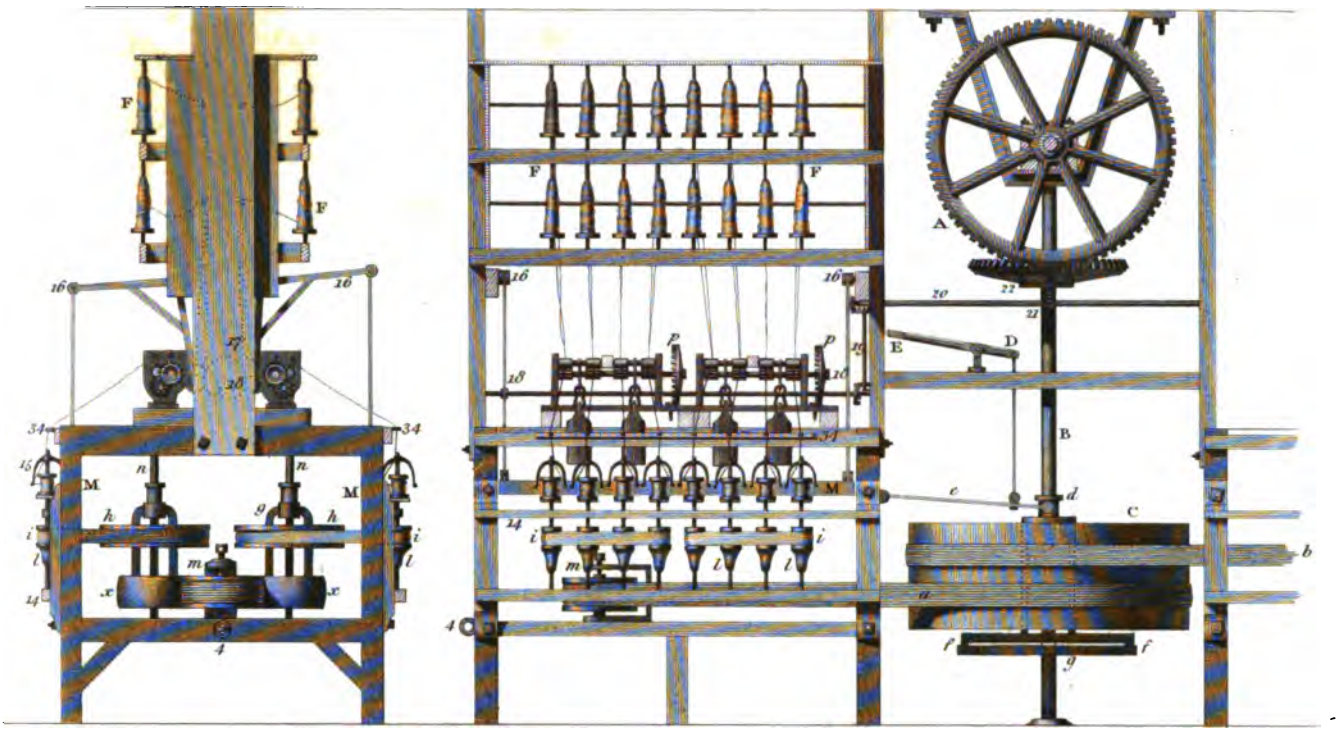
COTTON MANUFACTURE.

WATER SPINNING FRAME.

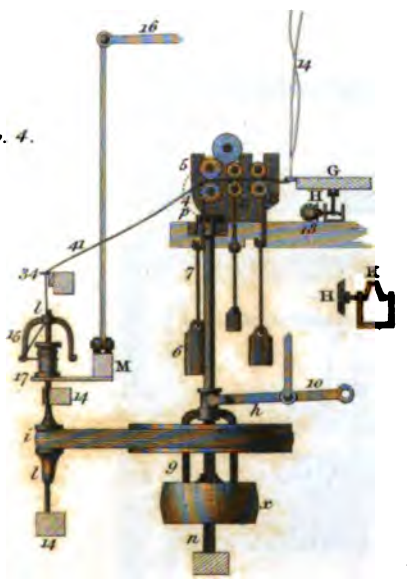
End View. Fig. 2.

Elevation. Fig. 1.

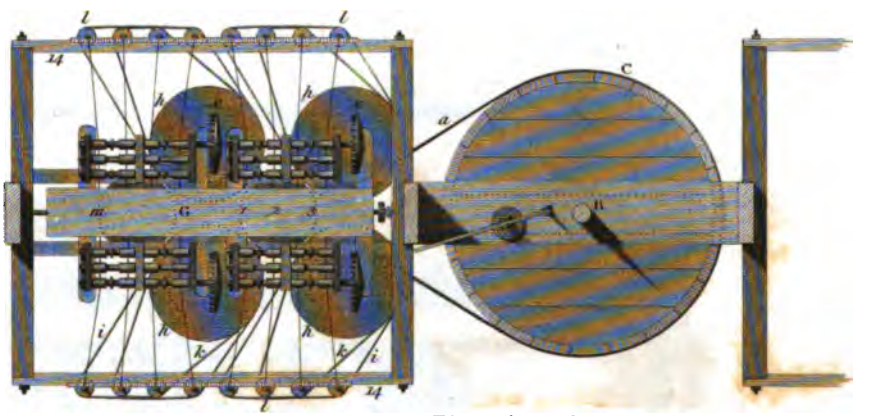


Spindle enlarged.

Fig. 4.



Plan. Fig. 3.

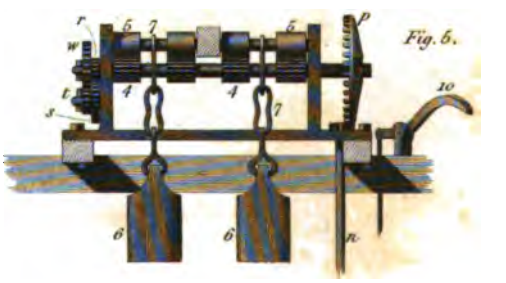


Elevation of rollers.

End View.

Fig. 6.

Fig. 6.



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Lowry sculp.

COTTON MANUFACTURE.

THROSTLE SPINNING FRAME.

Fig. 1.

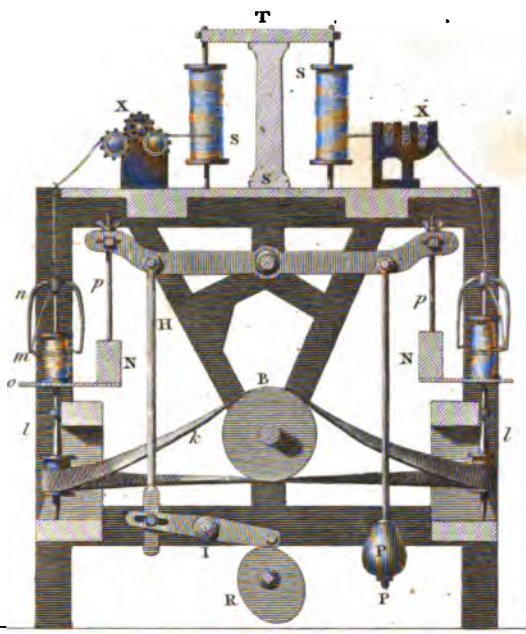


Fig. 2.

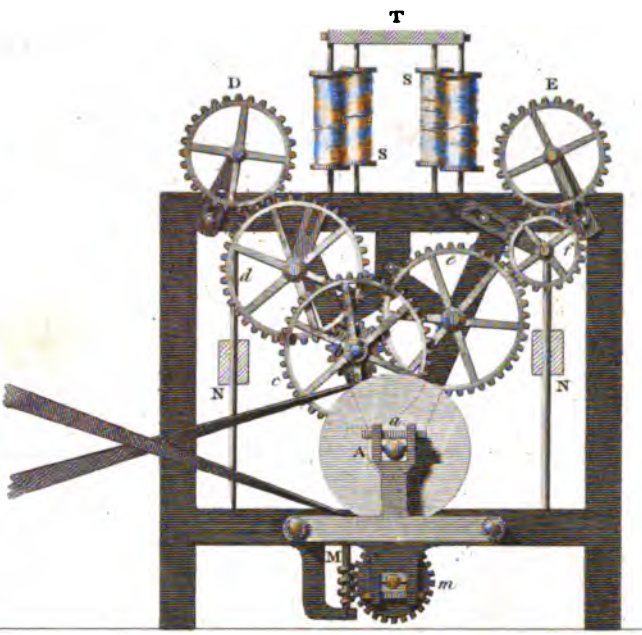
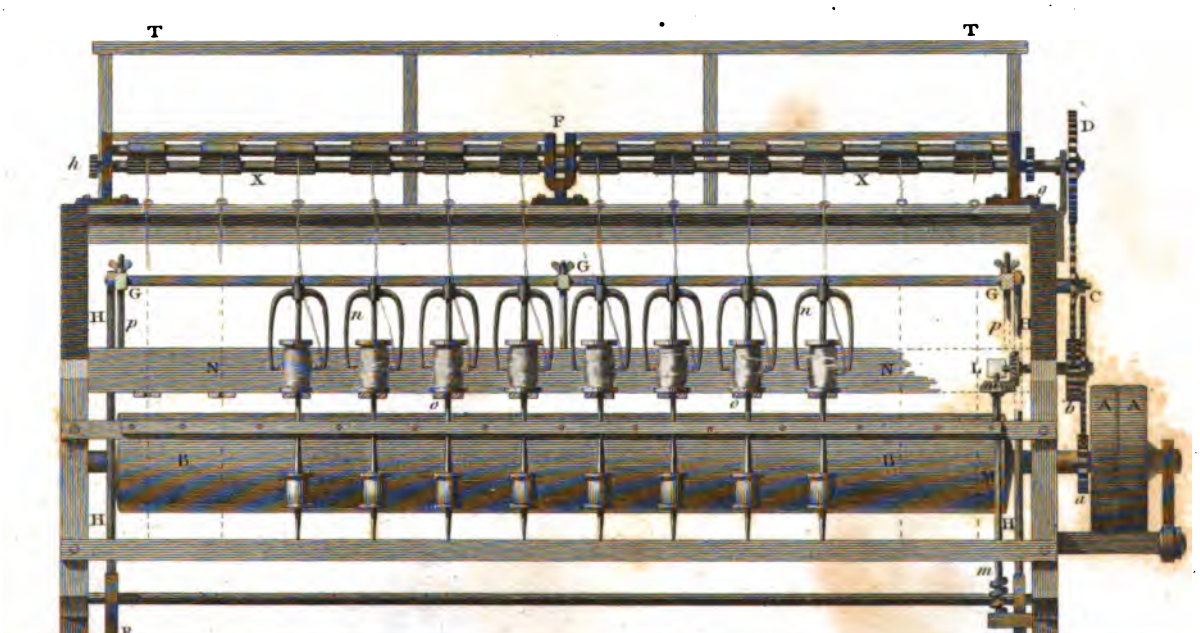


Fig. 3.

Elevation in Front.



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Engraved by W. Lowe

MULE SPINNING.

Fig. 1.

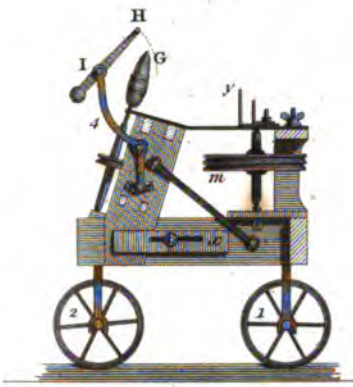


Fig. 2.

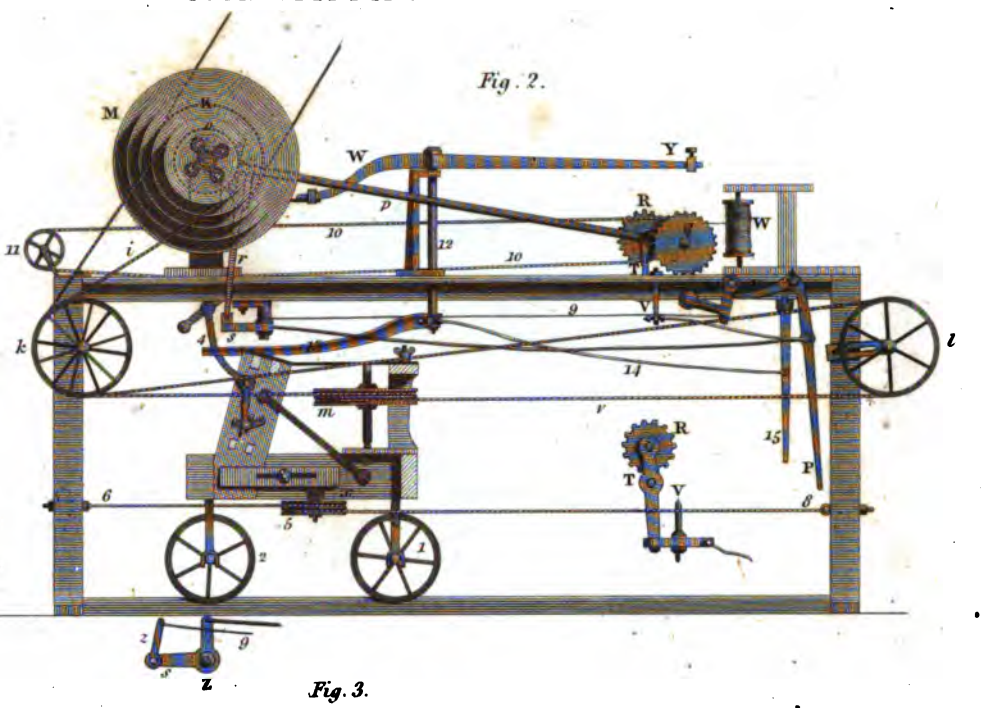


Fig. 3.

Elevation in Front.

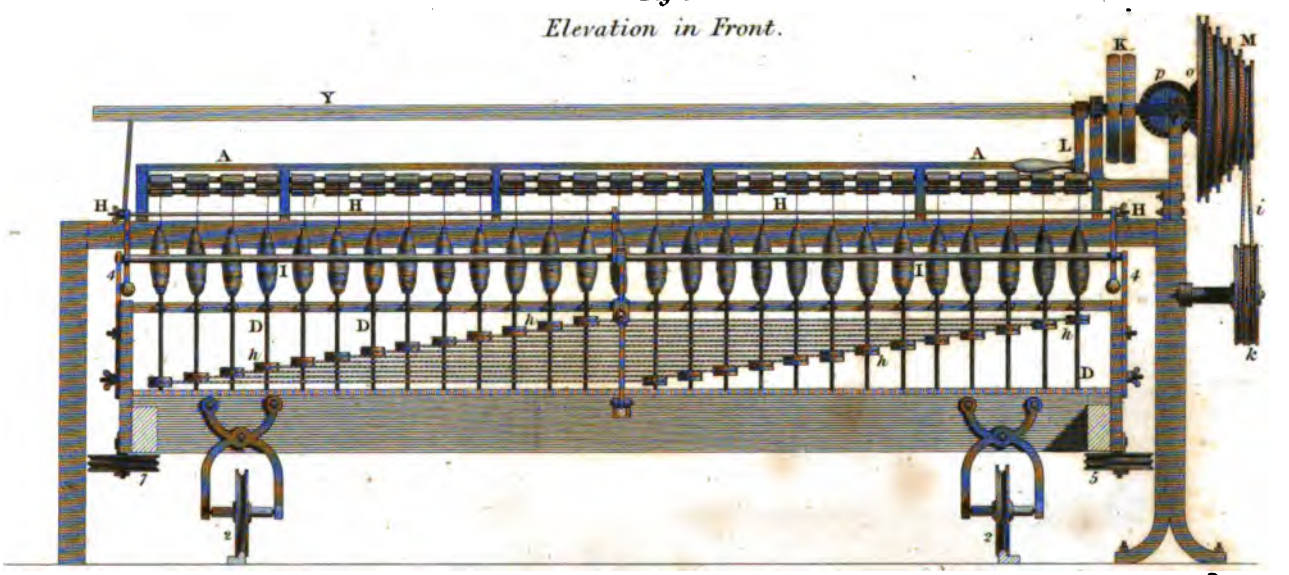


Fig. 4.

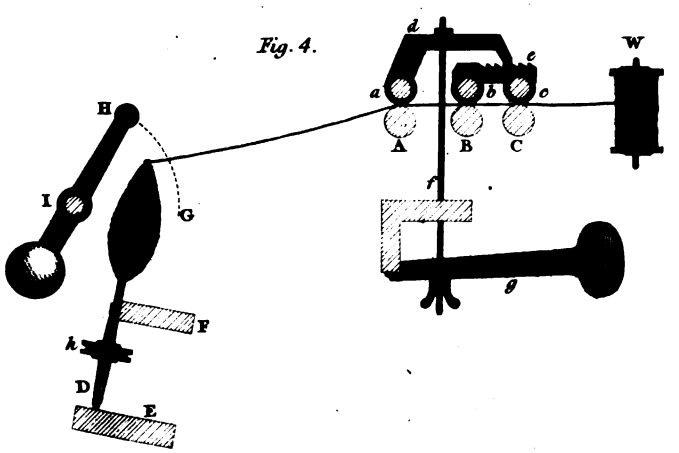
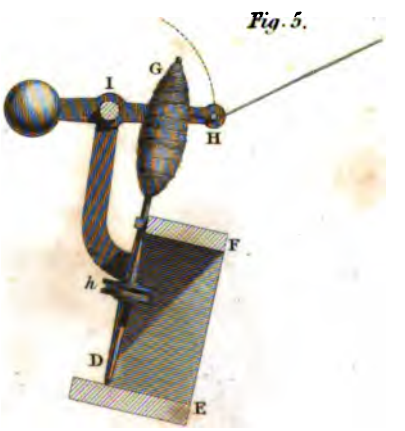


Fig. 5.



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COTTON MANUFACTURE.

REELING.

Fig. 1.

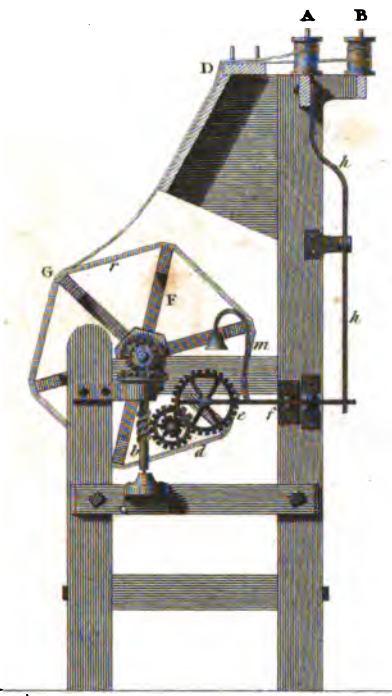
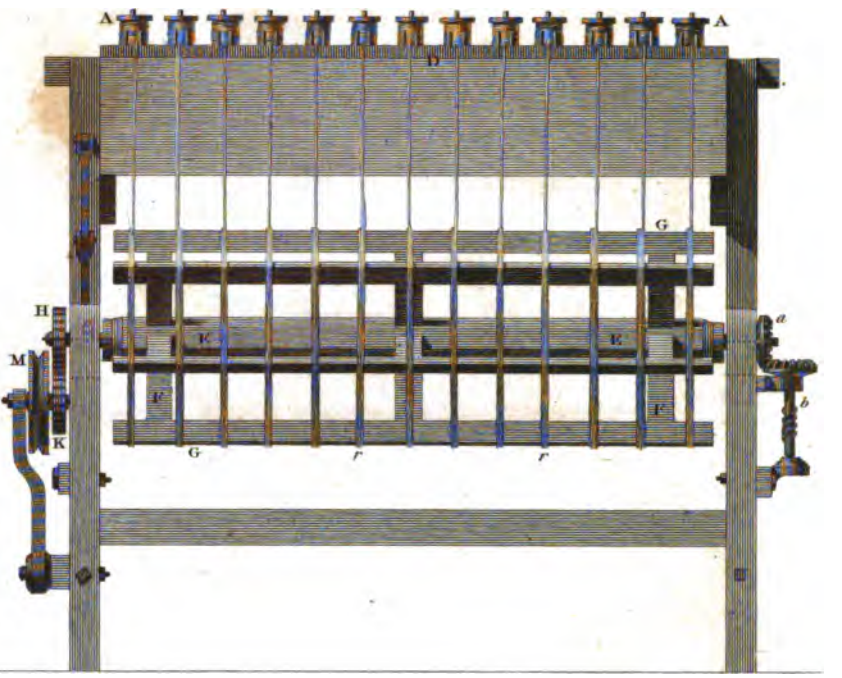


Fig. 2.



Machine for winding sewing cotton into Balls.

Fig. 3.

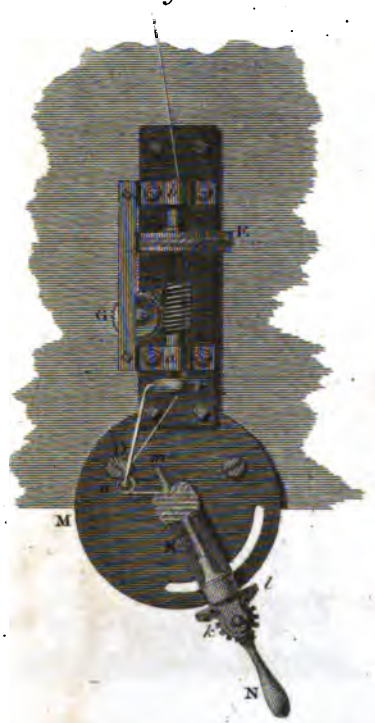
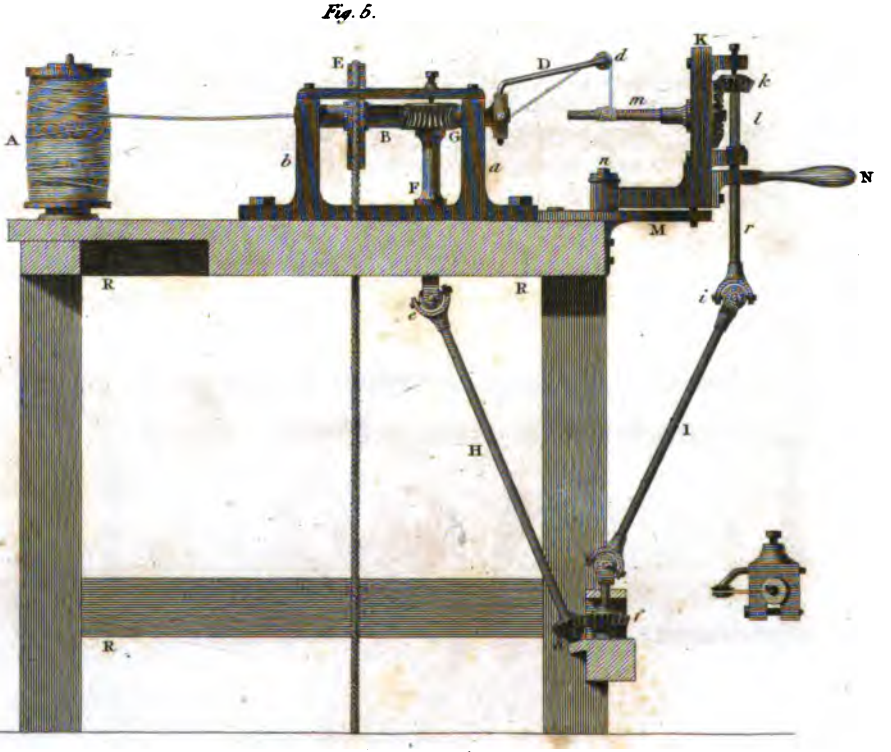


Fig. 5.

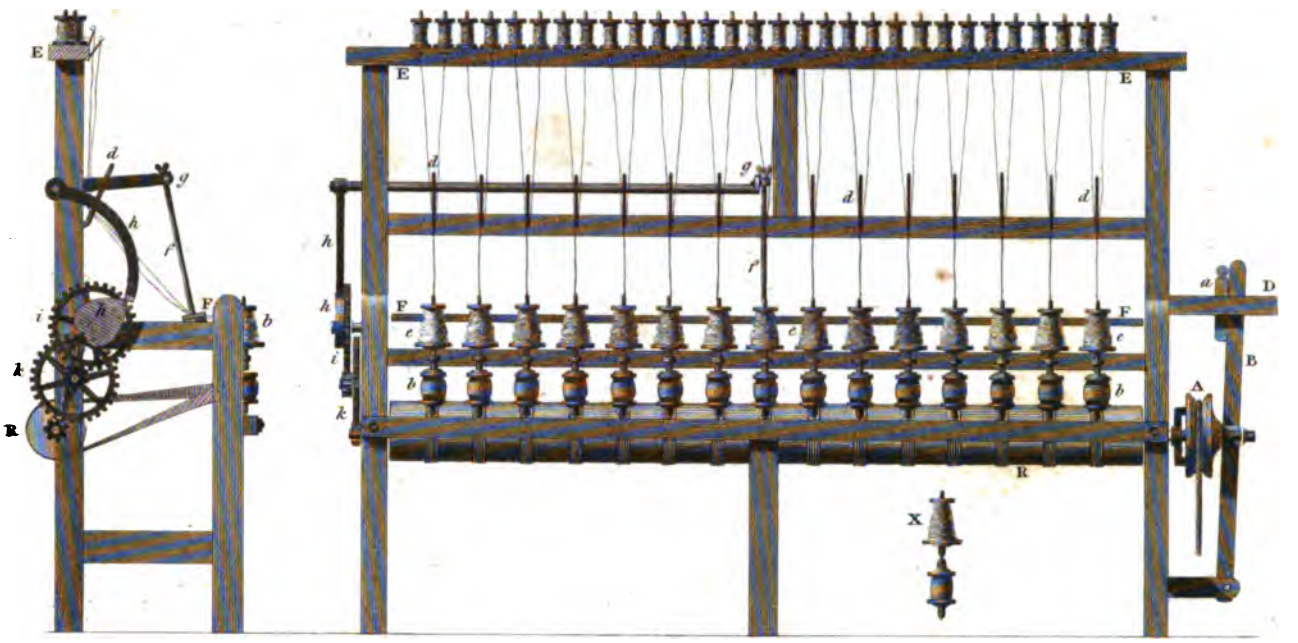


COTTON MANUFACTURE.

PLATE XIII.

Fig. 2.

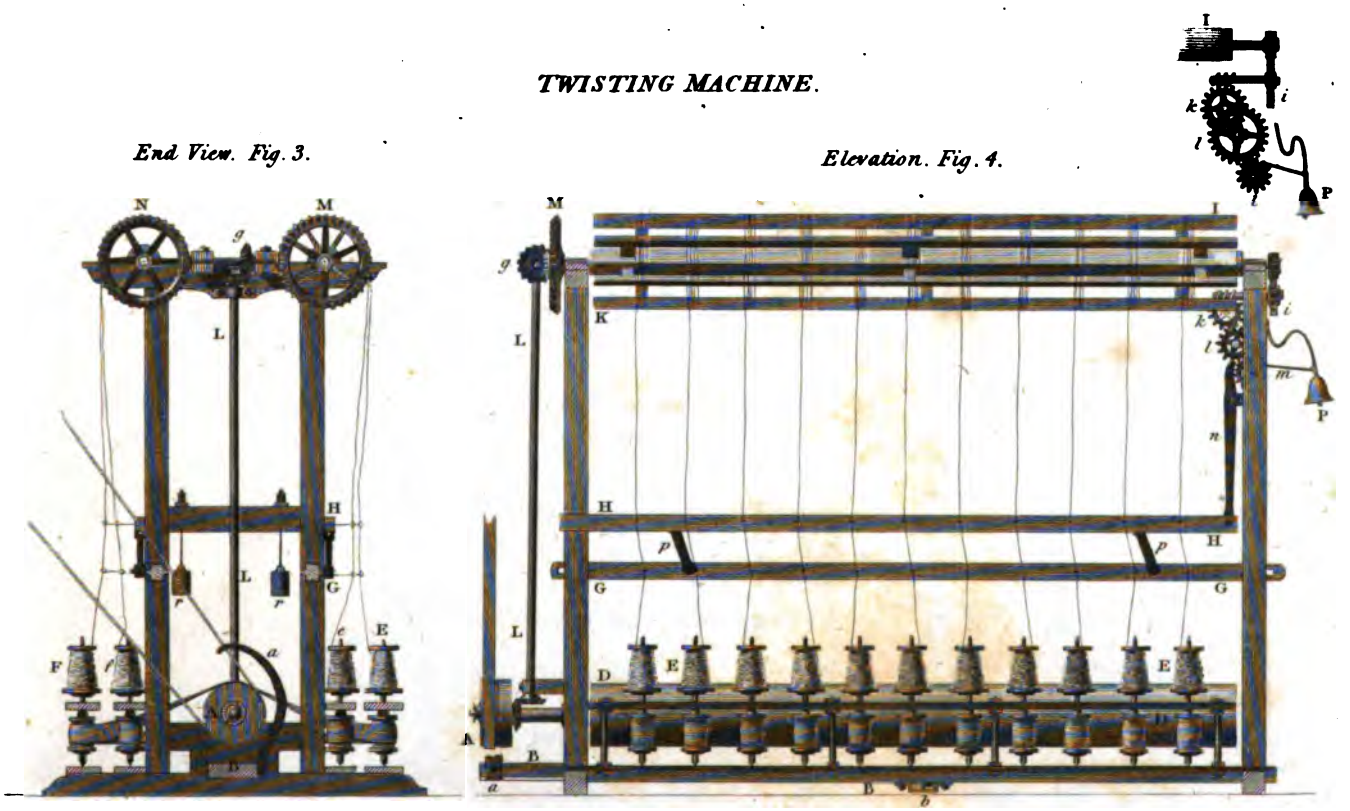
Fig. 1. DOUBLING MACHINE.



TWISTING MACHINE.

End View. Fig. 3.

Elevation. Fig. 4.

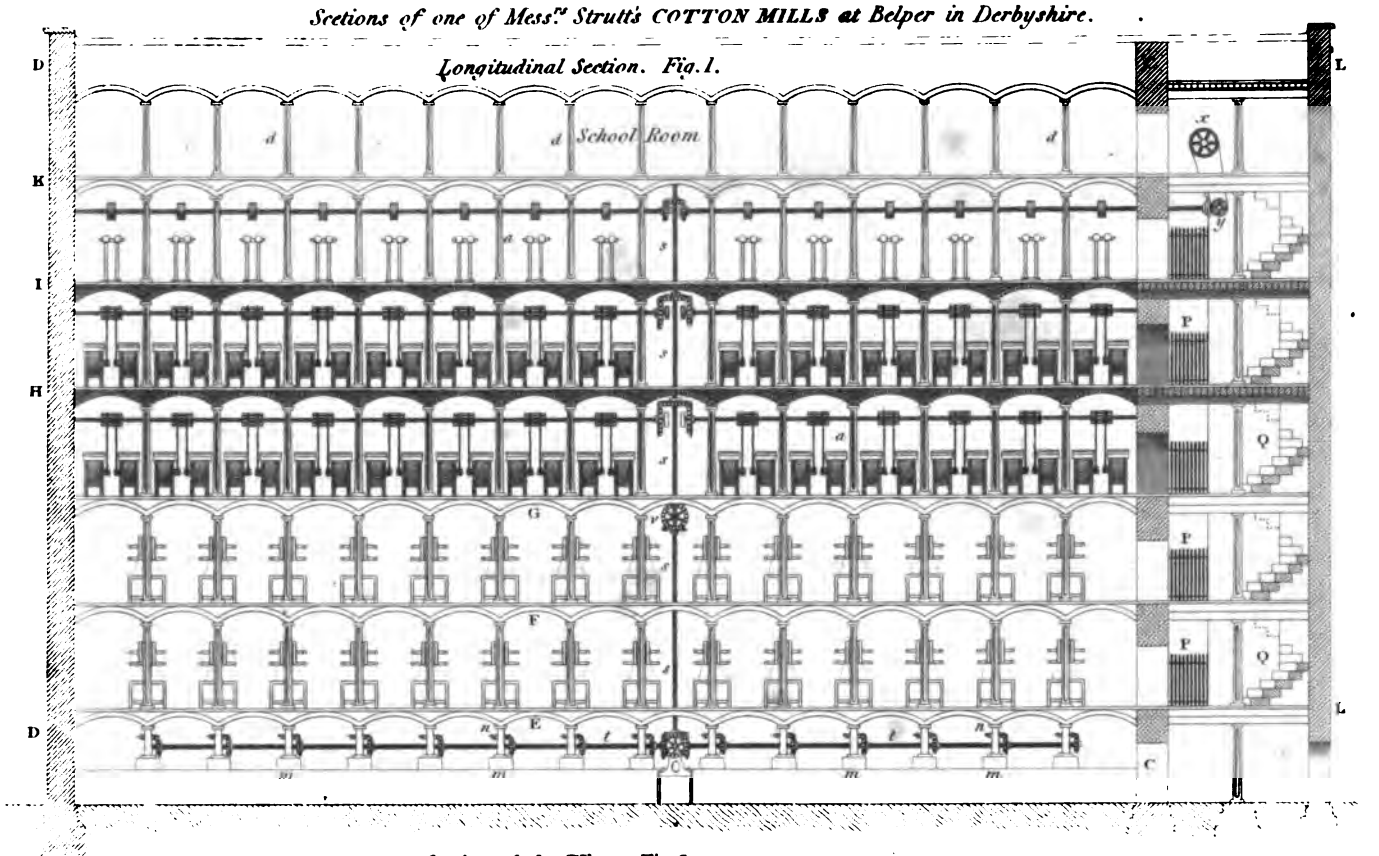


J. Farey Jun. del. *Published as the Act directs, 1814, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row, London.* *Lowry sculp.*

COTTON MANUFACTURE.

Sections of one of Mess.rs Strutt's COTTON MILLS at Belper in Derbyshire.

Longitudinal Section. Fig.1.



Section of the Wing. Fig.3.

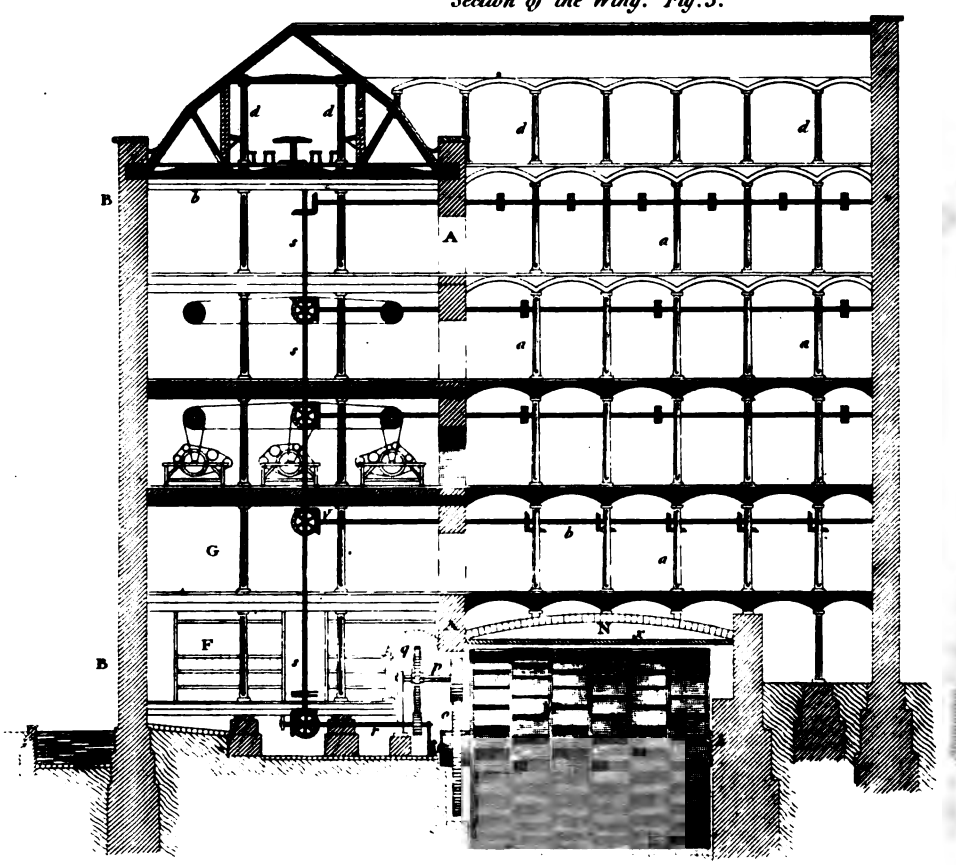
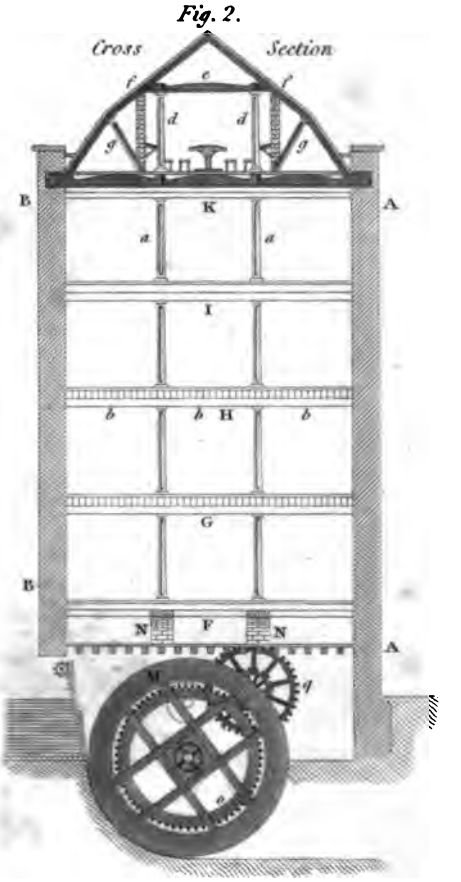


Fig. 2.

Cross Section



Ju.r del. Published as the Act directs, 1814, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row, London. W. Lowry sculp.

Fig. 1. Two Troughs of a Grinding Mill.

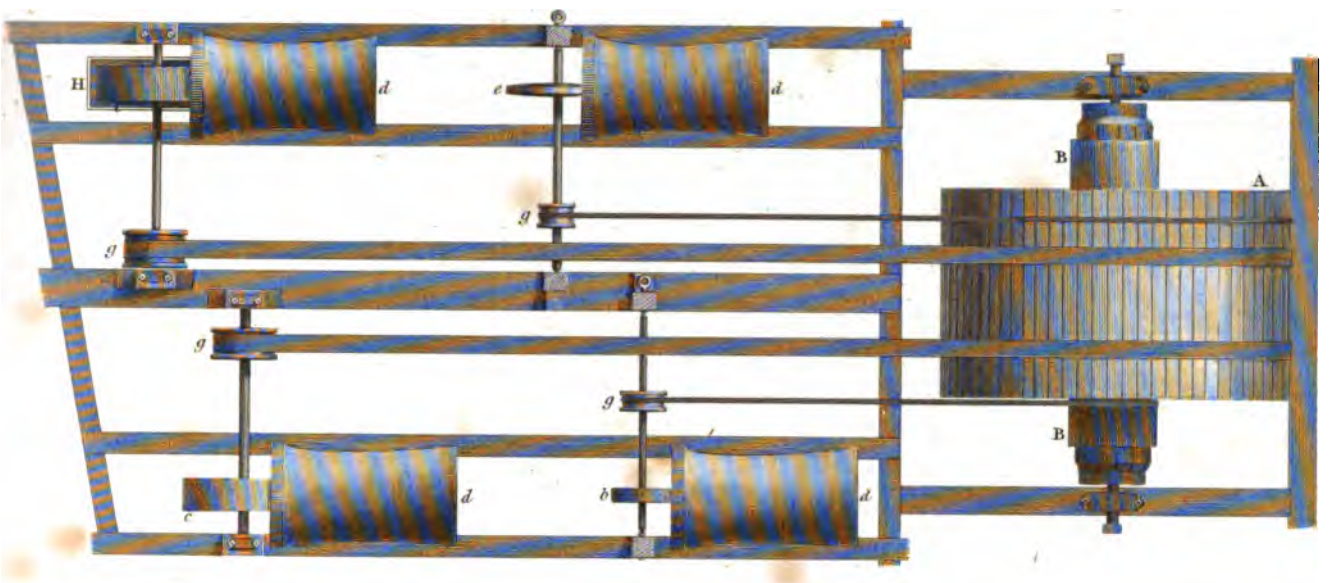


Fig. 3. Pressing Vice.

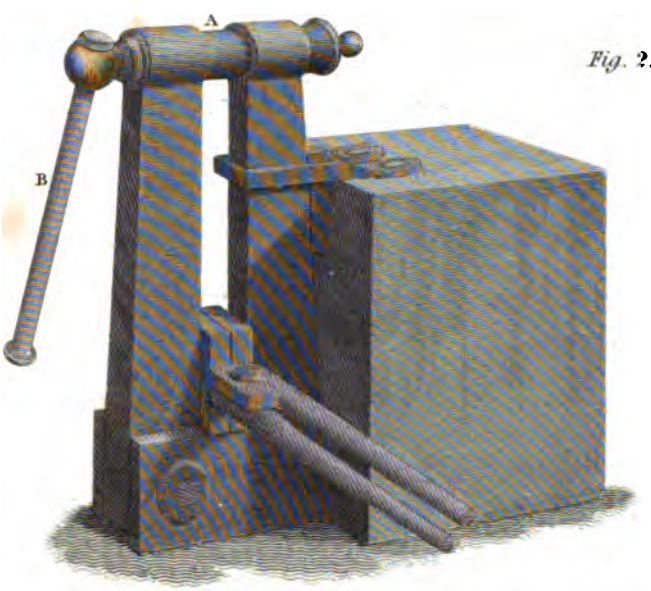
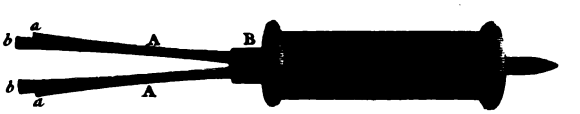


Fig. 2. Tongs for pressing Knife Handles.

Fig. 2.

Fig. 3. Spring Drill.



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Engraved by Wilson Lowry.

CYCLOID.

Fig. 1.

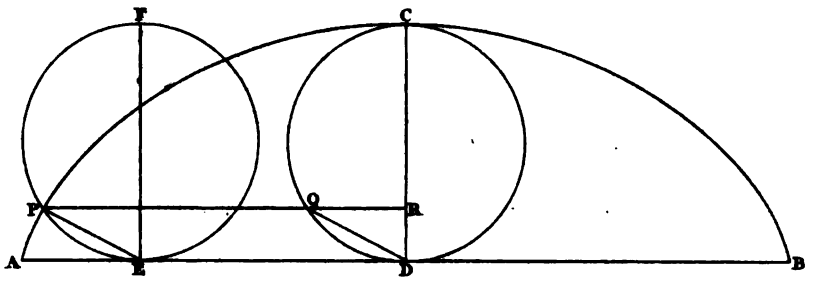


Fig. 2.

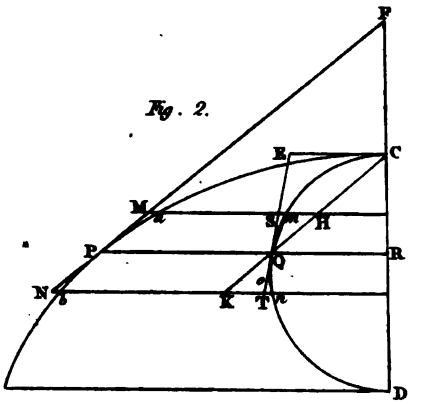


Fig. 3.

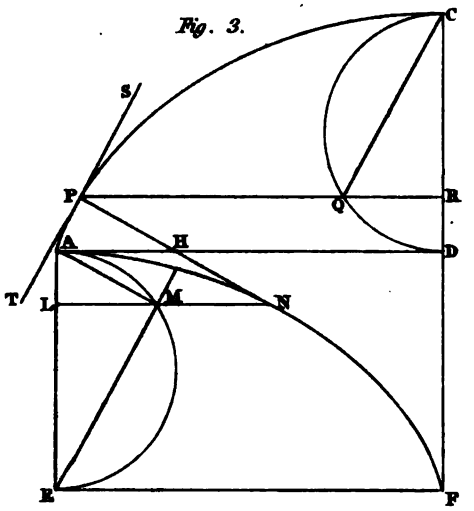
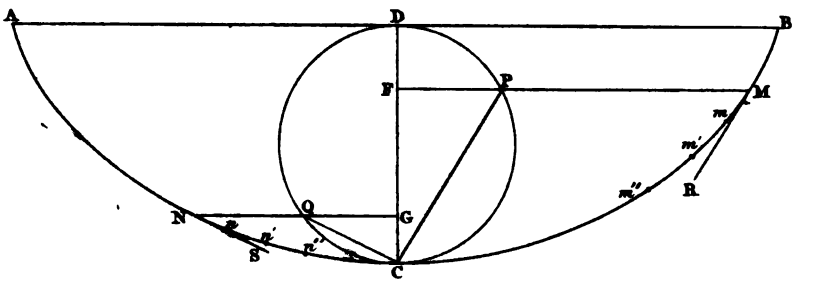


Fig. 4.



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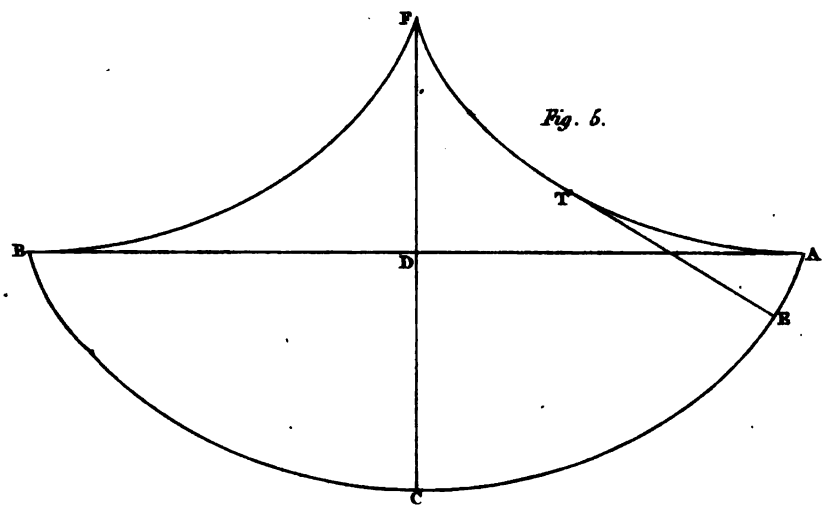

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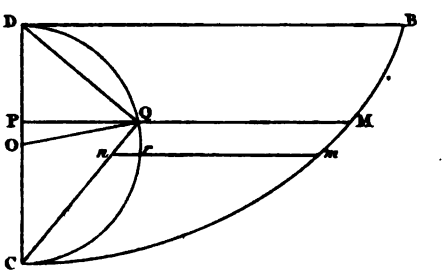

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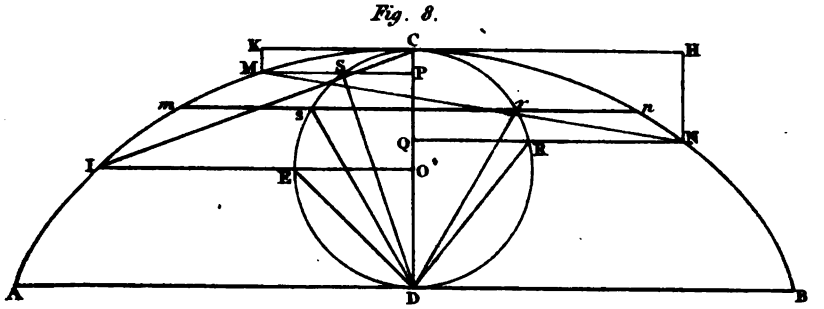

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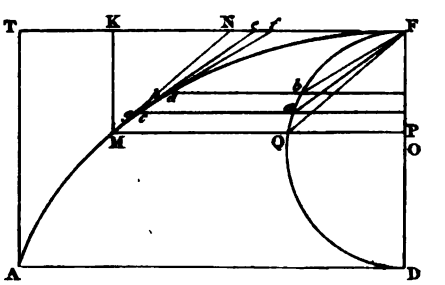

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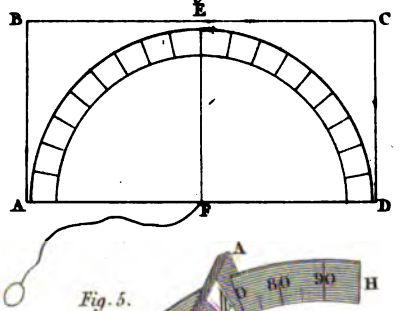
DIALLING.

DECLINATOR.

Fig. 1.



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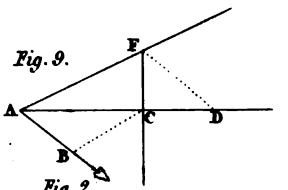

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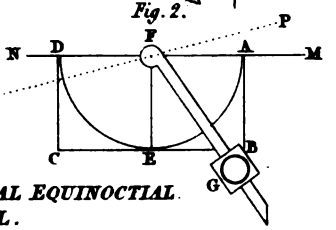

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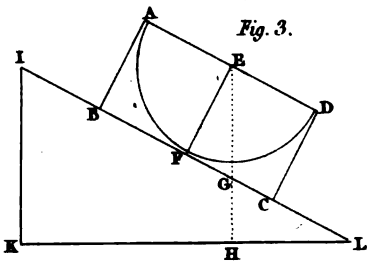
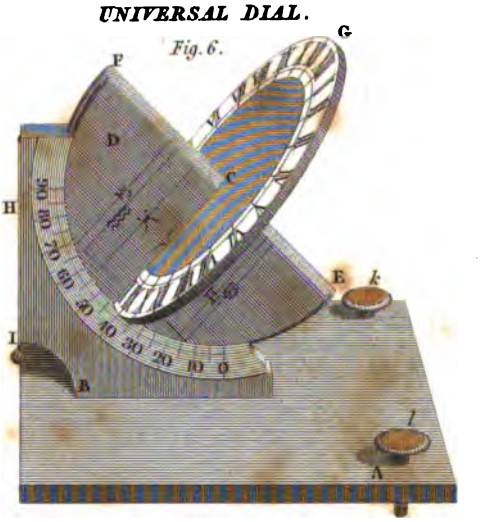


UNIVERSAL DIAL.

Fig. 6.



UNIVERSAL EQUINOCTIAL DIAL.

Fig. 5.

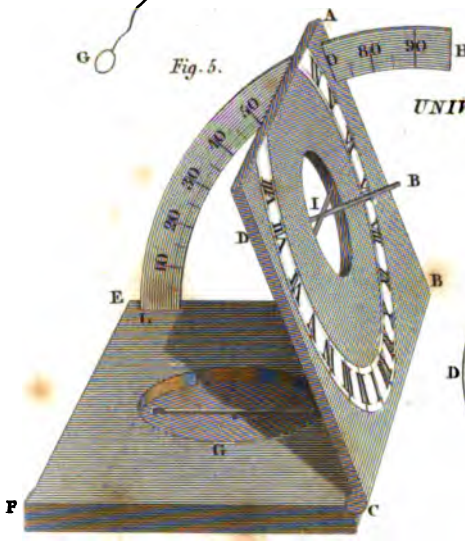
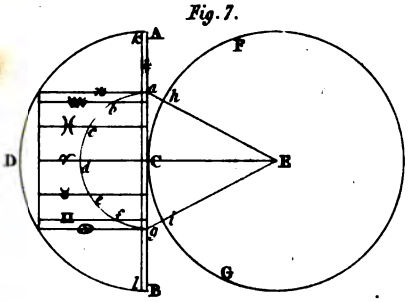


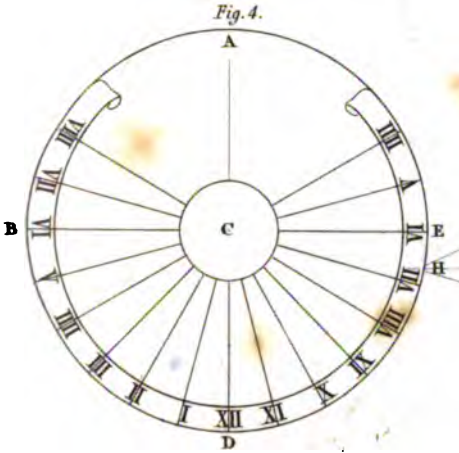
Fig. 1.

Fig. 7.



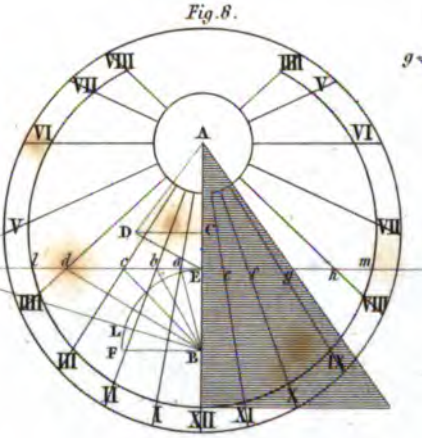
EQUINOCTIAL DIAL.

Fig. 4.



HORIZONTAL DIAL.

Fig. 8.



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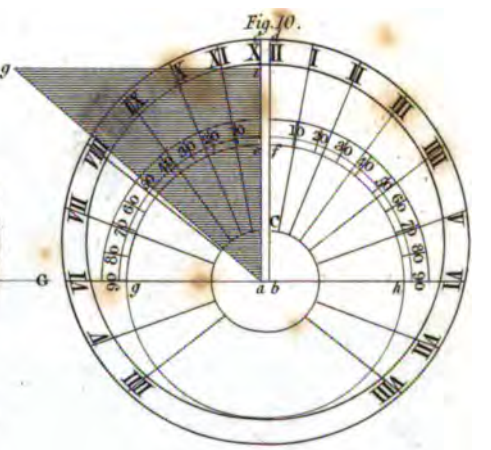

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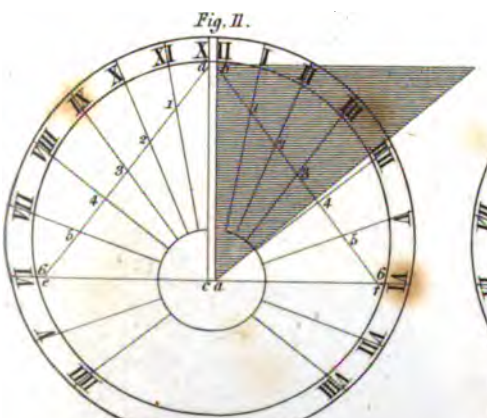

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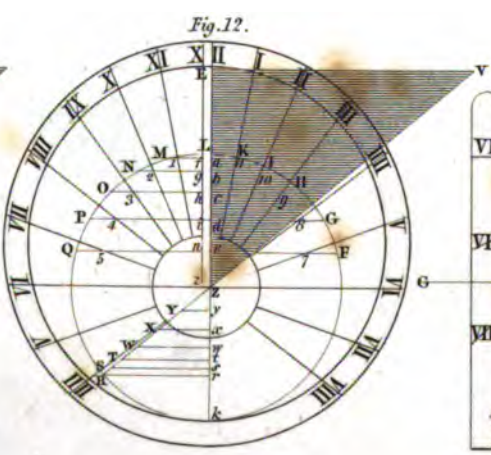
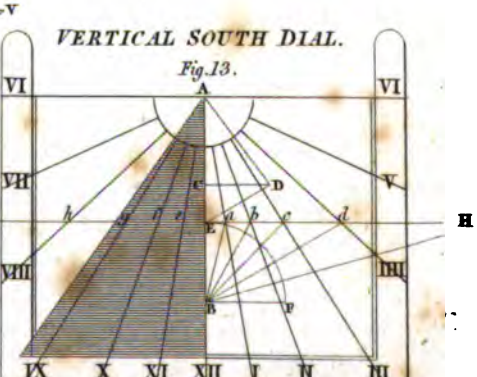


VERTICAL SOUTH DIAL.

Fig. 13.



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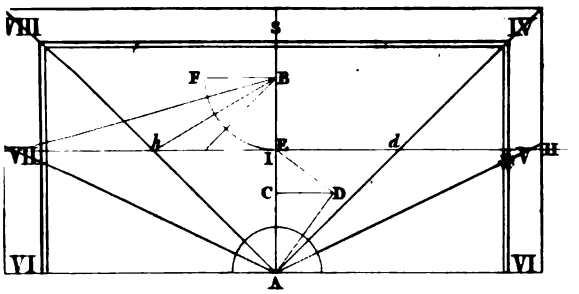
DIALLING.

Fig. 14.
VERTICAL NORTH DIAL



POLAR DIAL

Fig. 17.

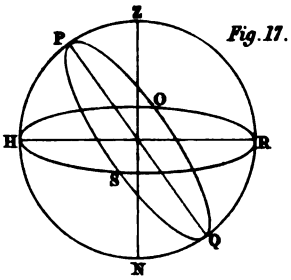


Fig. 15.
SOUTH DIAL

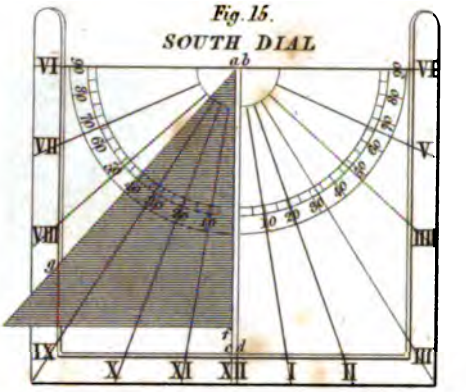


Fig. 23.
INCLINED DIAL

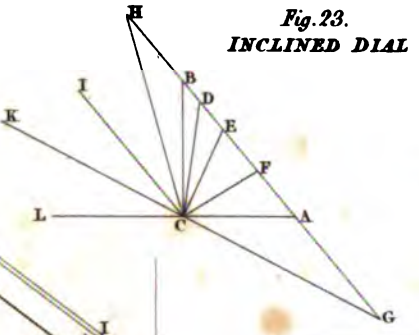


Fig. 16.
EAST DIAL

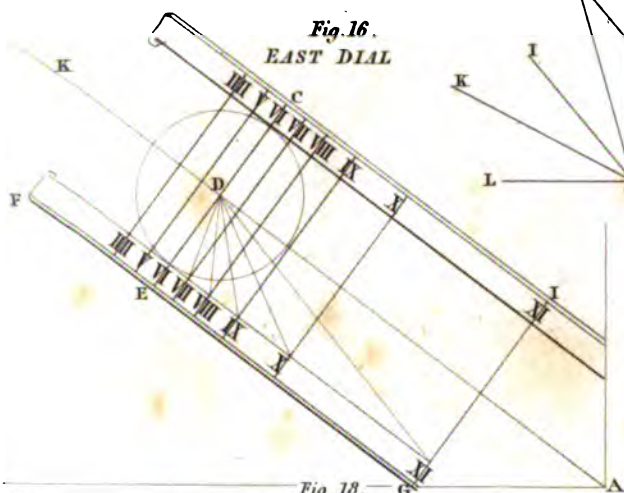
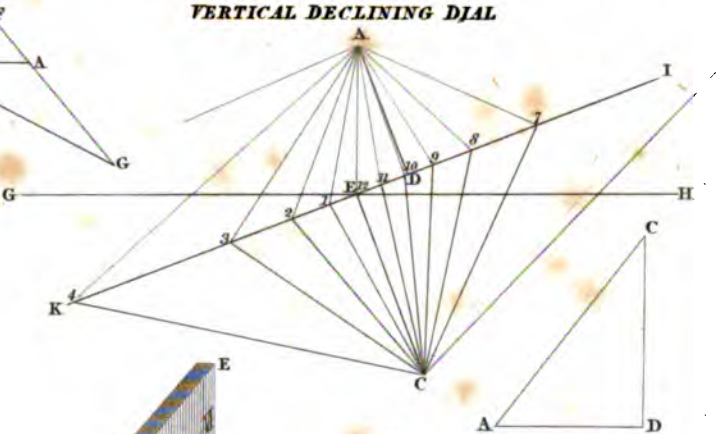


Fig. 22.
VERTICAL DECLINING DIAL



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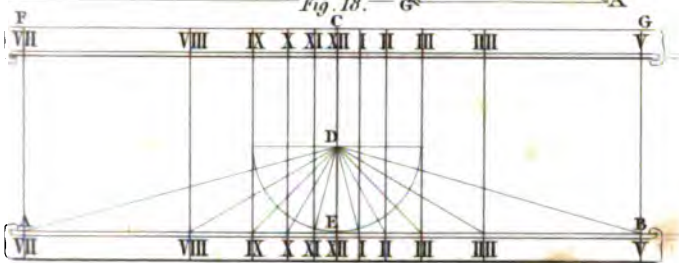
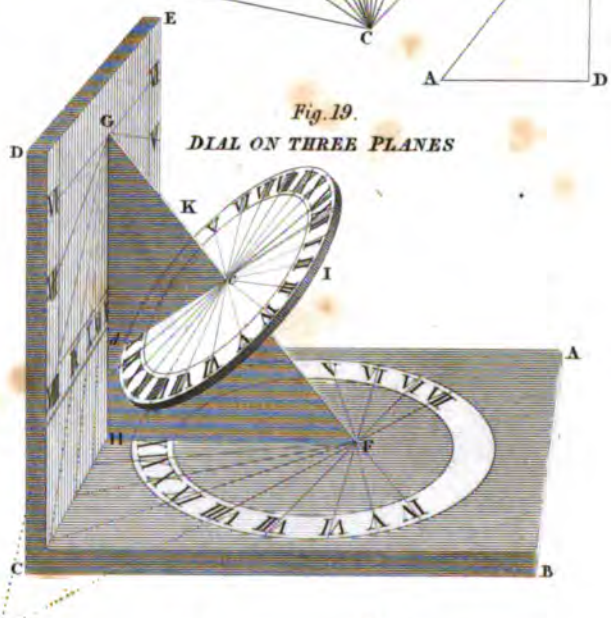


Fig. 19.
DIAL ON THREE PLANES



DIALS

Fig. 20.

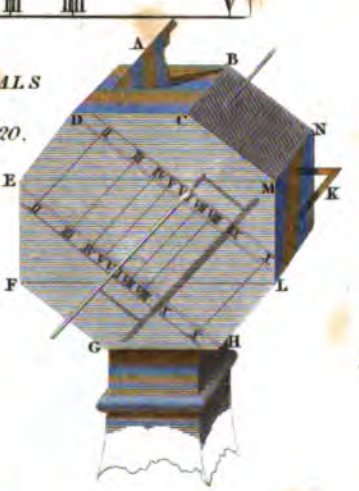


Fig. 24.
UNIVERSAL MECHANICAL DIAL

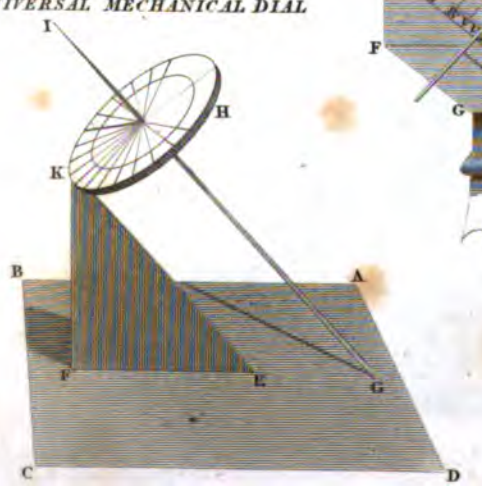
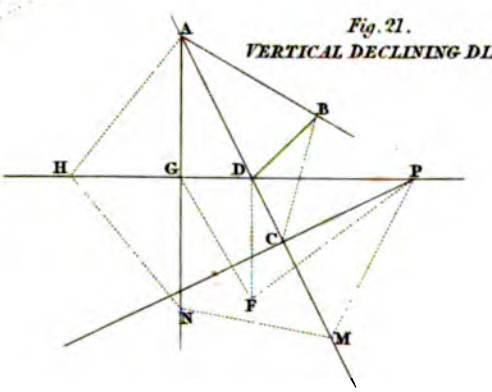


Fig. 21.
VERTICAL DECLINING DIAL



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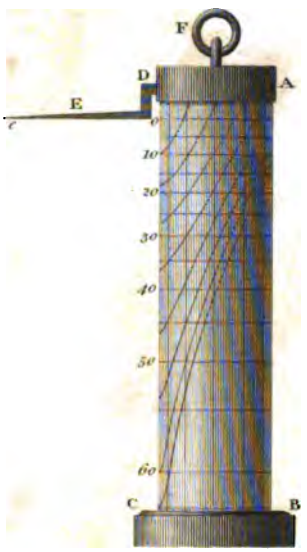
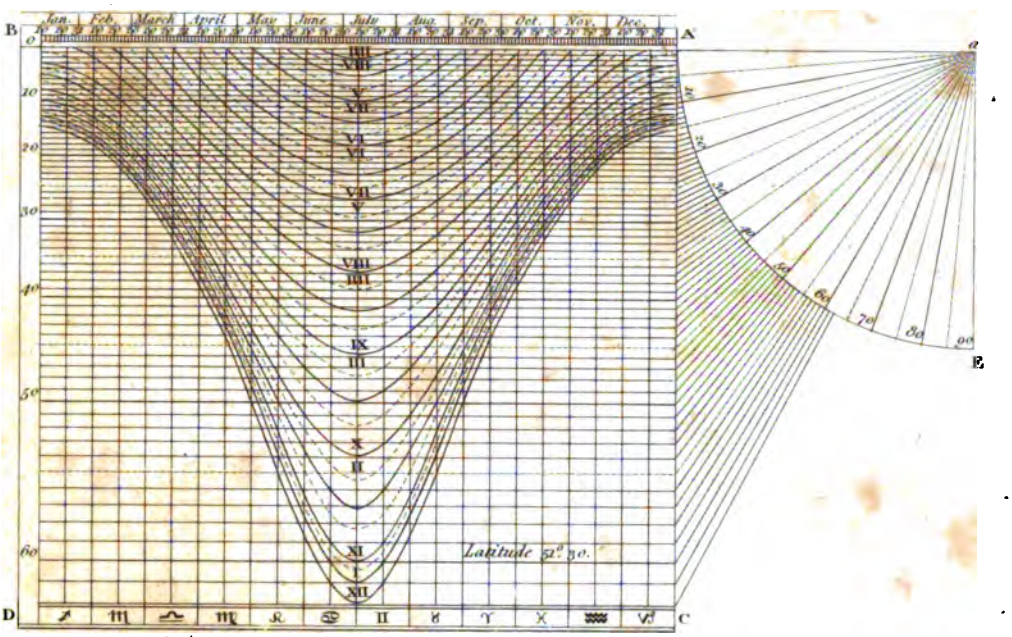
Cylindrical DIAL, Fig. 28.

Fig. 27.





Portable DIAL.

Fig. 29.

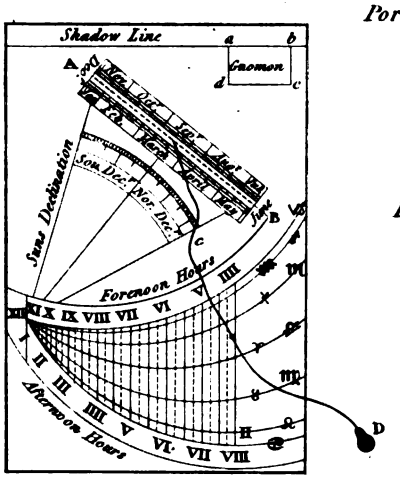
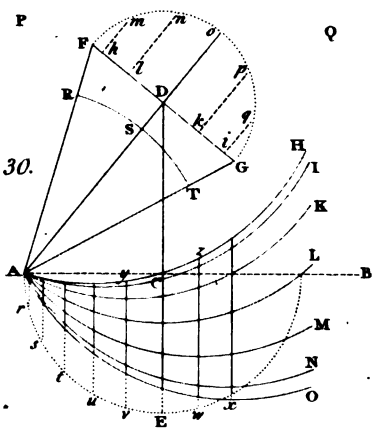


Fig. 30.



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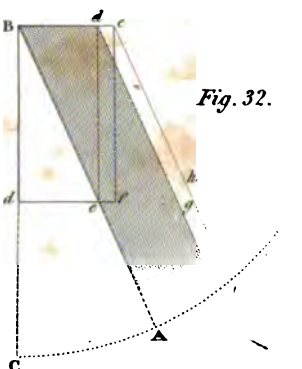

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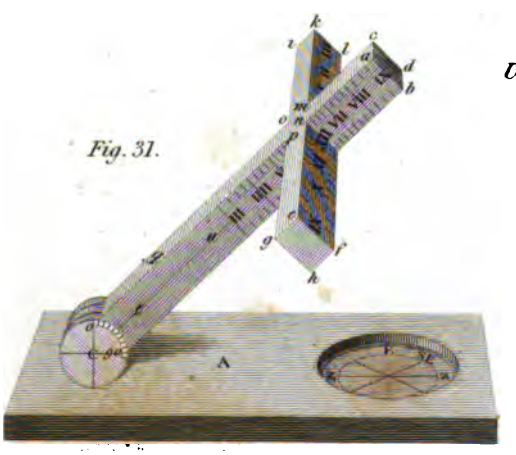
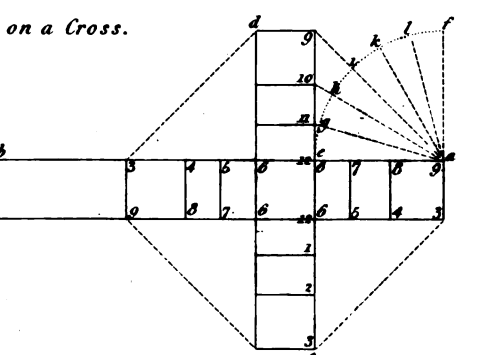


Universal DIAL on a Cross.

Fig. 33.



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DIALLING.

Fig 35

Fig. 25. PL. II.

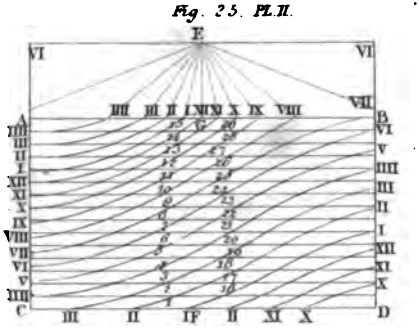


Fig 26 PL. II.

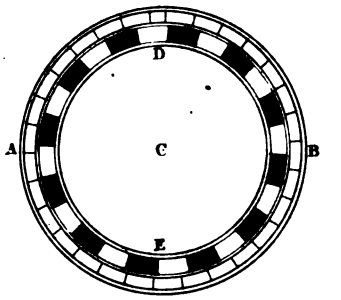


Fig 37

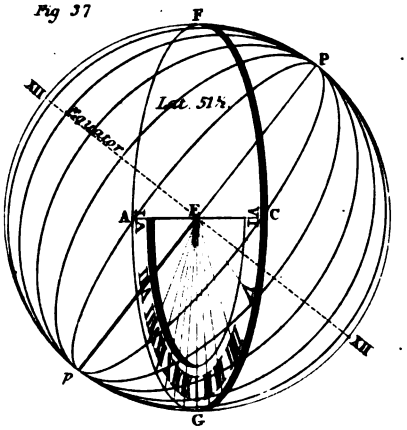


Fig. 36.

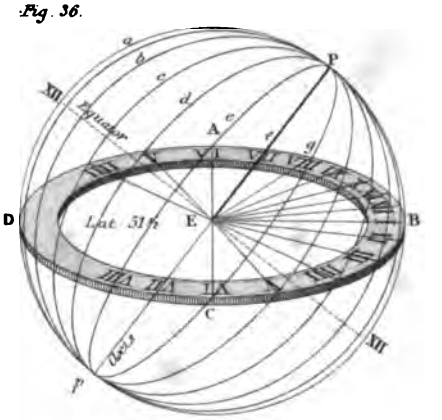


Fig. 34.

Ring Dial

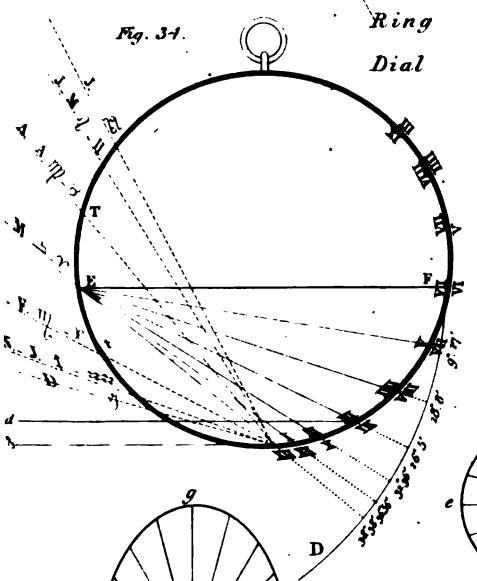
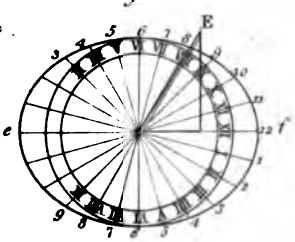


Fig. 40



Dialling Cylinder

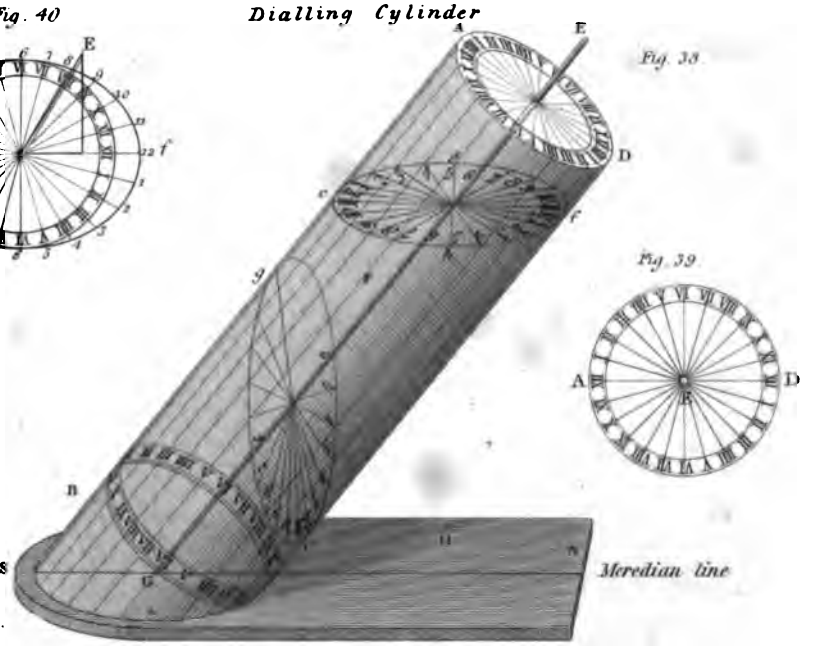
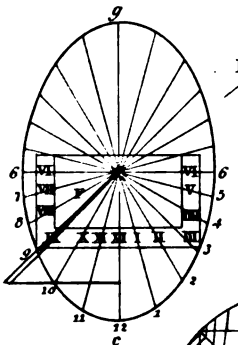
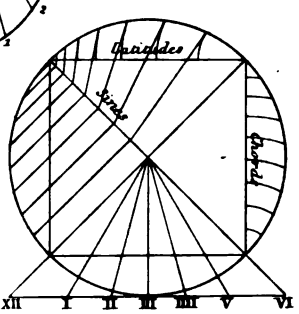


Fig. 38

Fig. 39

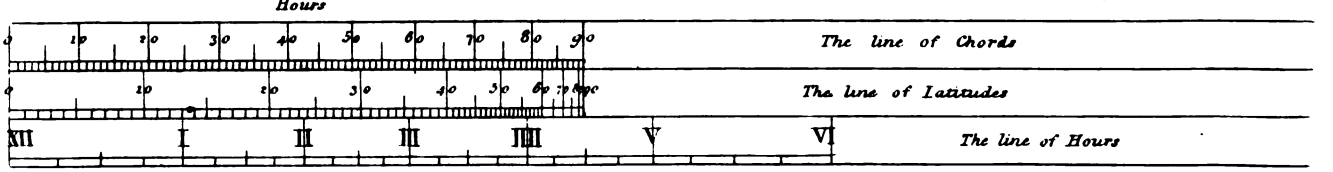
Fig. 41.





Dialling Scales

Fig. 42



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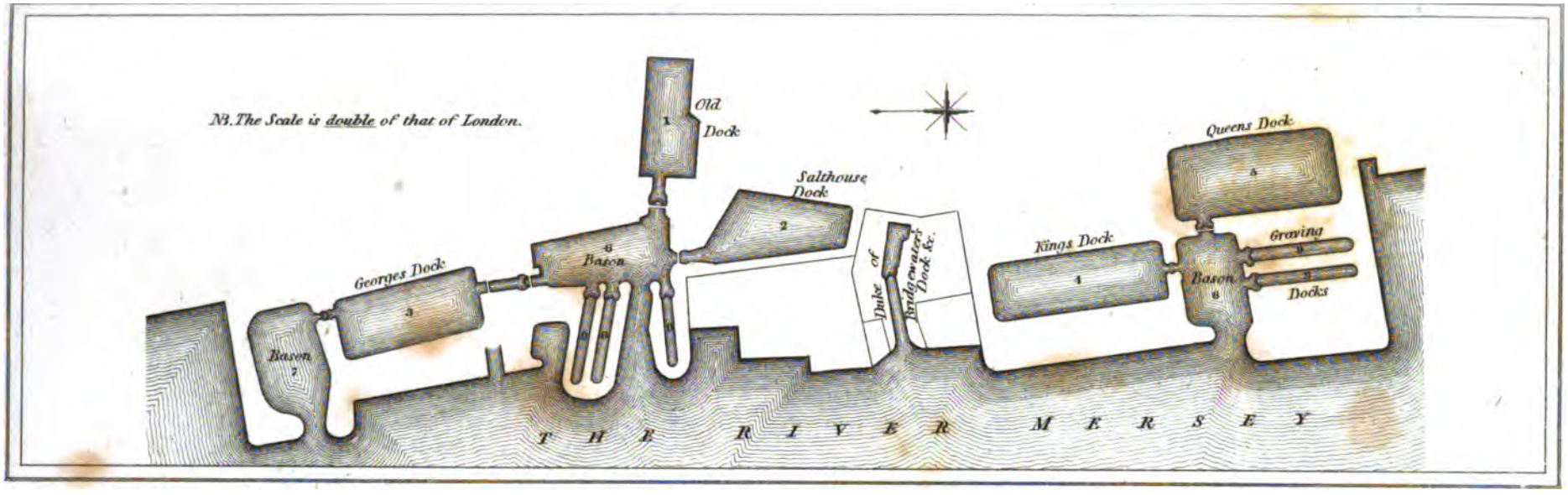
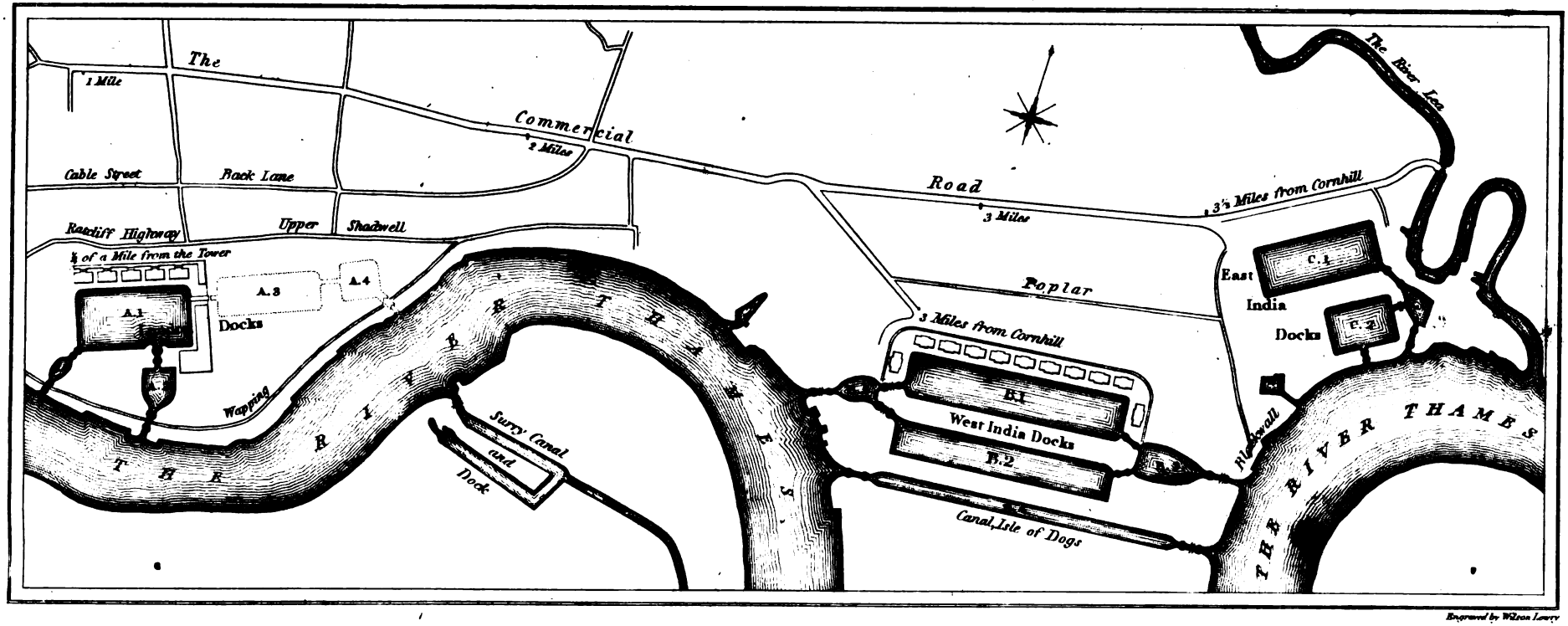
Lowry Sculp.



PLAN OF THE DOCKS AT LONDON, IN 1808.



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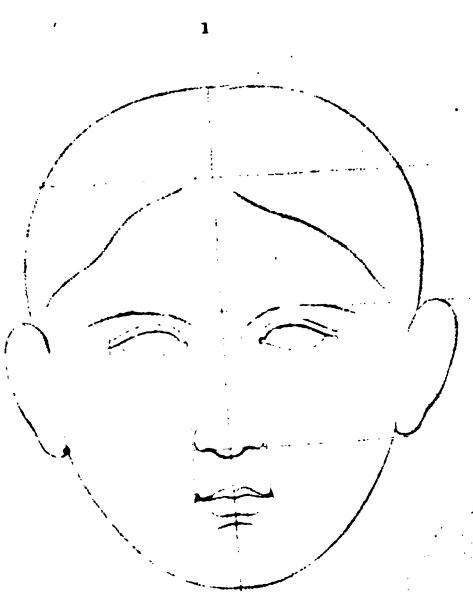
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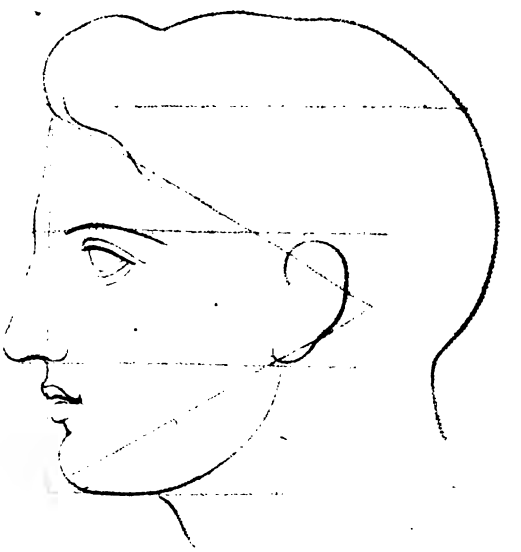
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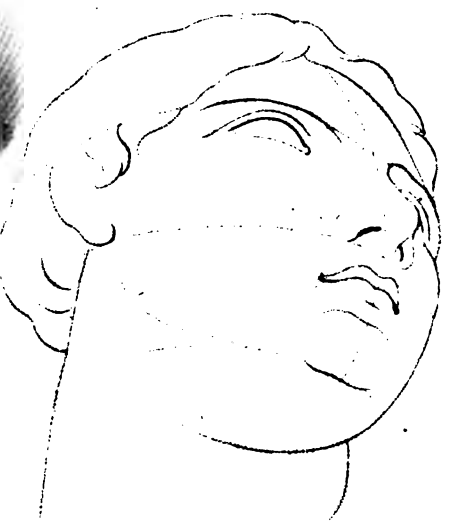

5

6

T.Milton sculp.

H. Howard Esq. R.A. del.

Published as the Act directs Jan 1.1810 by Longman Hurst Rees Orme & Brown Paternoster Row

From a Bust in the Collection of Charles Townley Esq.r

Dr. H.Howard, R.A. *Published as the Act directs, Jan.y 2.d 1804, by Longman & Rees, Paternoster Row*

Plate 8.

From an original Drawing by Gaspar Poussin in the Collection of Benjamin West Esq.r P.R.A.

Published by Longman, Hurst, Rees & Orme, Paternoster Row, May 16th 1809.

From an original Drawing by Gaspar Poussin in the Collection of Benjamin West Esq.r P. R. A.

Published by Longman, Hurst, Rees, & Orme, Paternoster Row, May 28.th 1809.

From an Original Drawing in the Collection of the Duke of Devonshire.

Published as the Act directs Jan.y 1.1830 by Longman Hurst Rees Orme & Brown Paternoster Row.

DRAWING INSTRUMENTS.

COMPASSES.

Fig. 6.

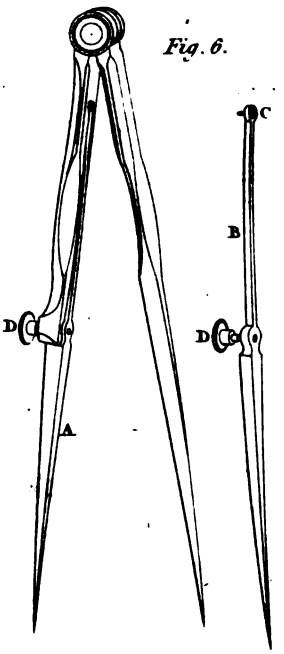


Fig. 1.

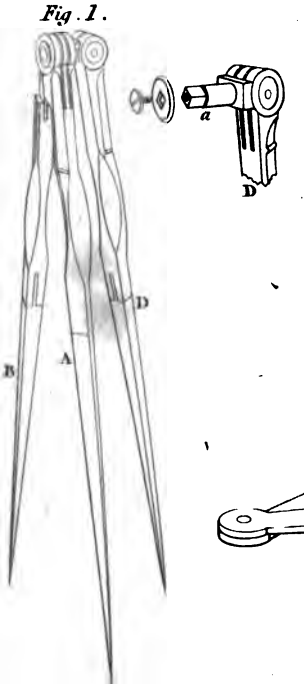


Fig. 4.

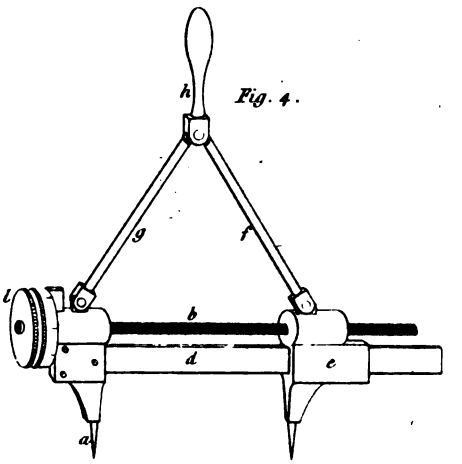
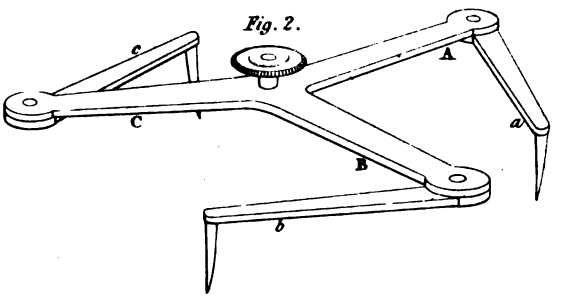


Fig. 2.



For Fig. 6. of this Plate see Plate TURNING, Fig. 20.

Fig. 5.

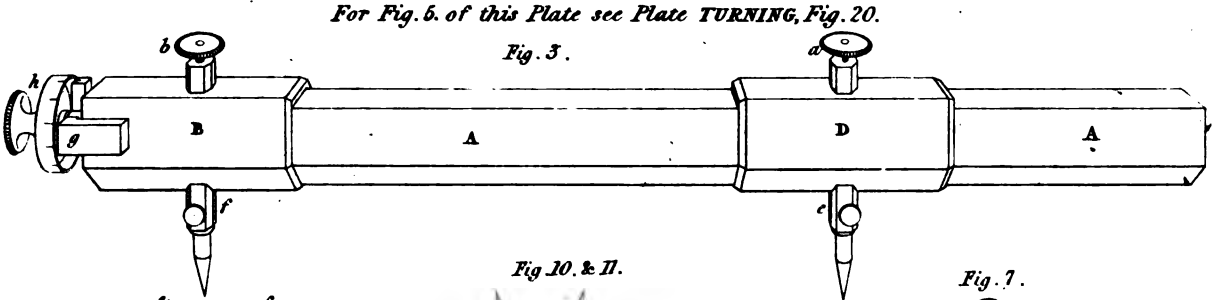


Fig. 10. & 11.

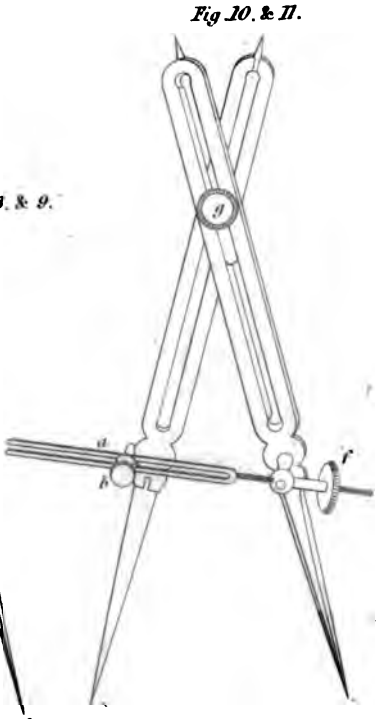


Fig. 8. & 9.

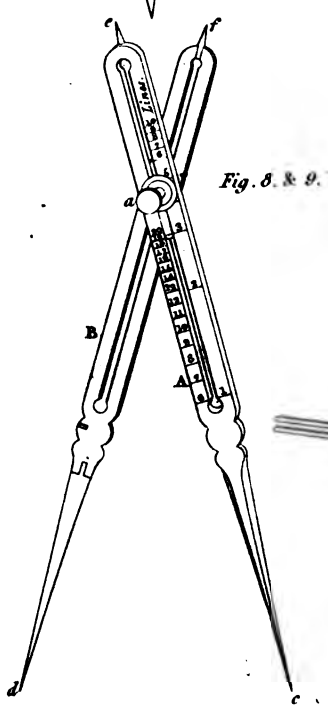
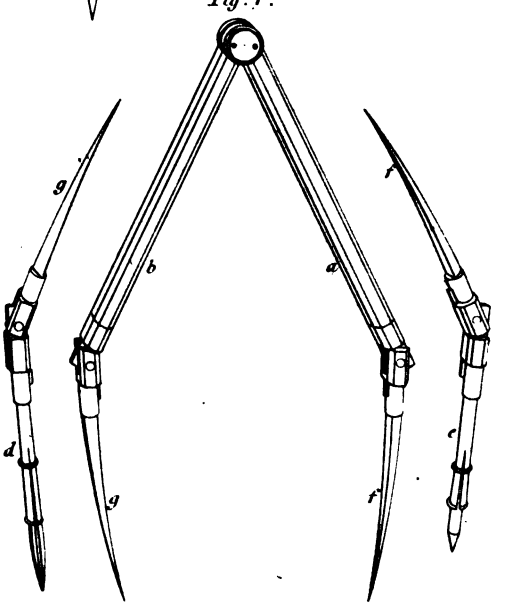


Fig. 7.



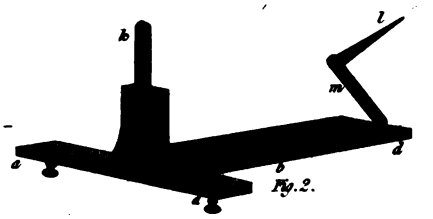
Jun.r delin. Published as the Act directs, 1811, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Engraved by Wilson Lowry.

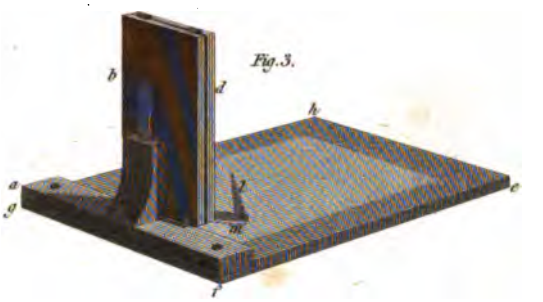
DRAWING INSTRUMENTS.

DELINEATORS

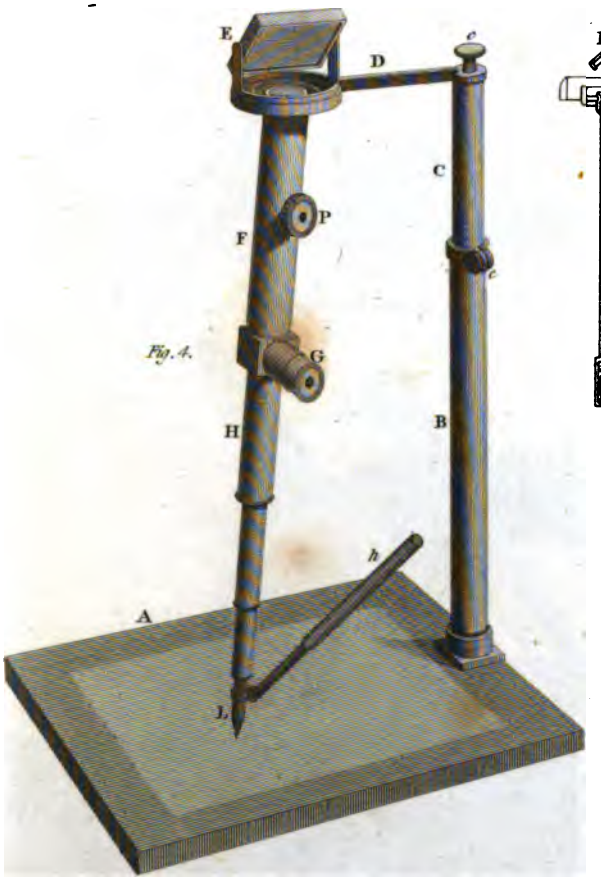
Mr. Peacock's delineator.

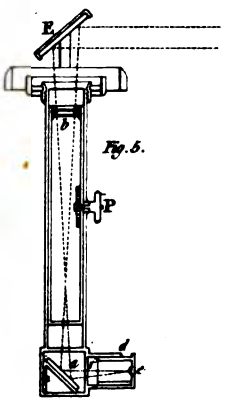
Miss Edgeworth's delineator.



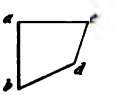


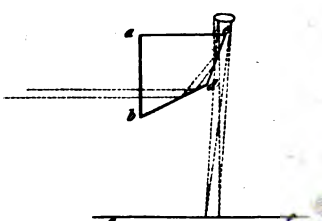
Ramsden's Optigraph.
improved by Tho.s Jones.





D.r Wollaston's Camera Lucida.





v J. Farey Jun.r

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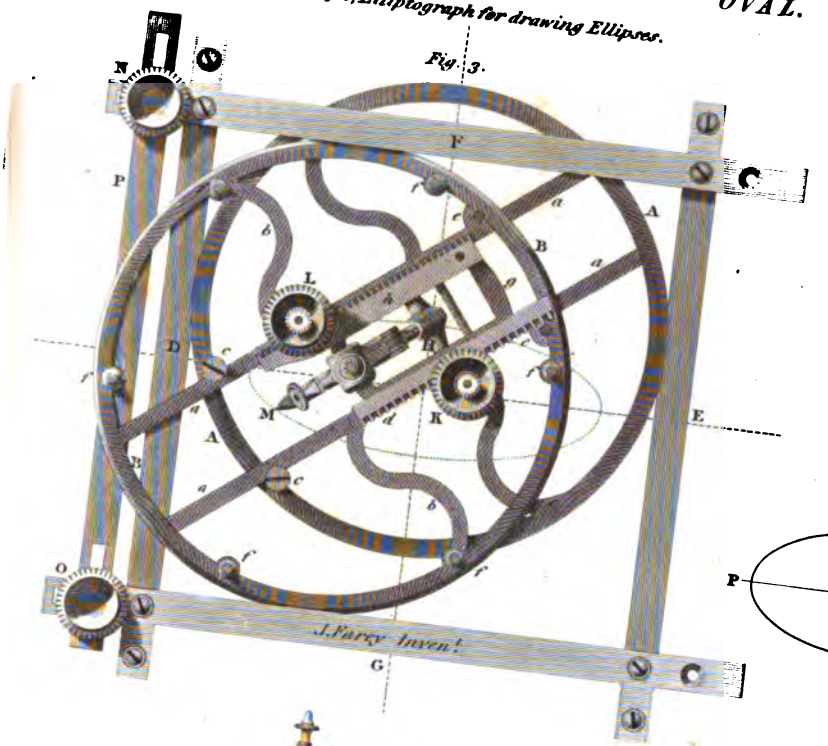
DRAWING INSTRUMENTS.

OVAL.

Mr. Farey's, Elliptograph for drawing Ellipses.

Fig. 3.



Oval. Fig. 1.

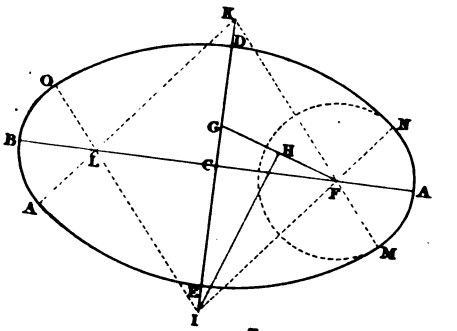


Fig. 6.

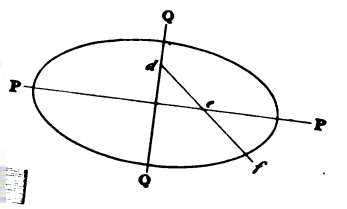


Fig. 2.

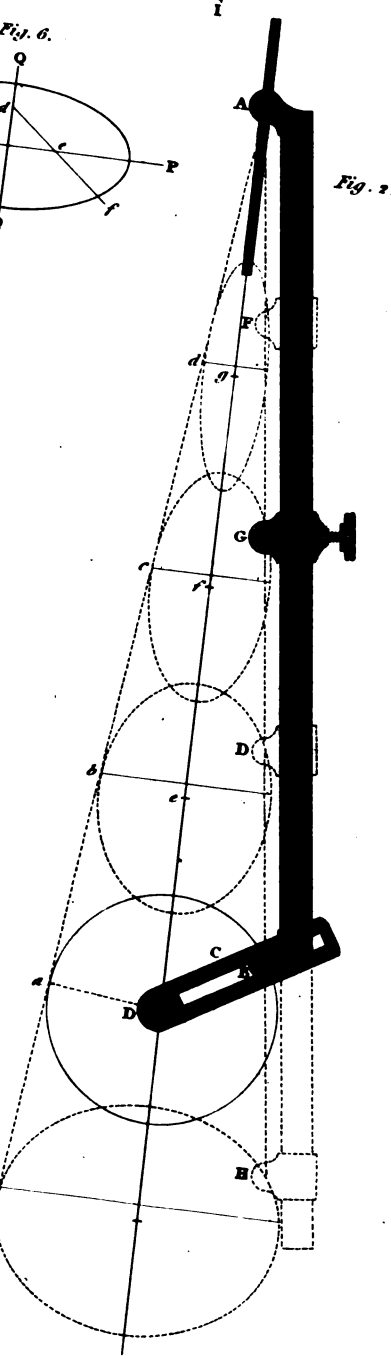


Fig. 4.

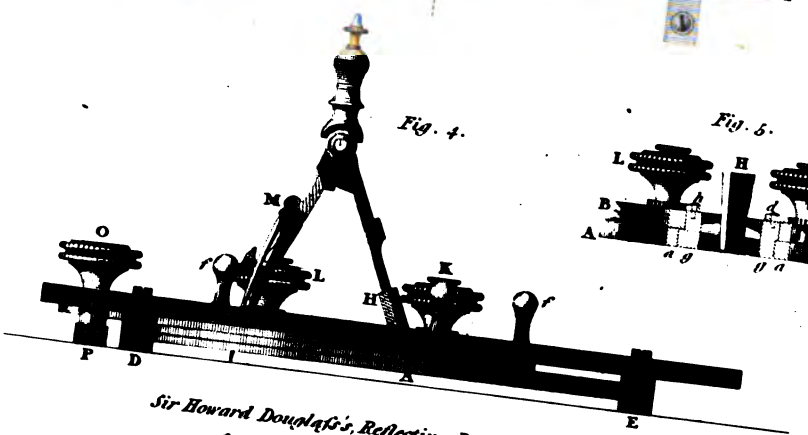
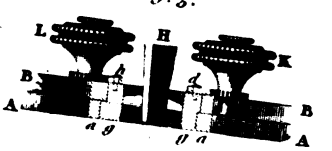
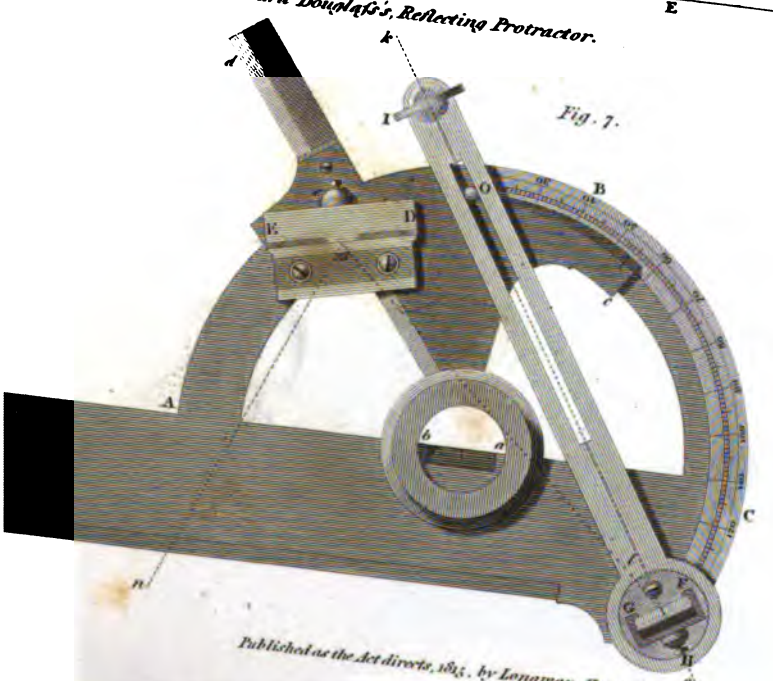


Fig. 5.



Sir Howard Douglas's, Reflecting Protractor.

Fig. 7.



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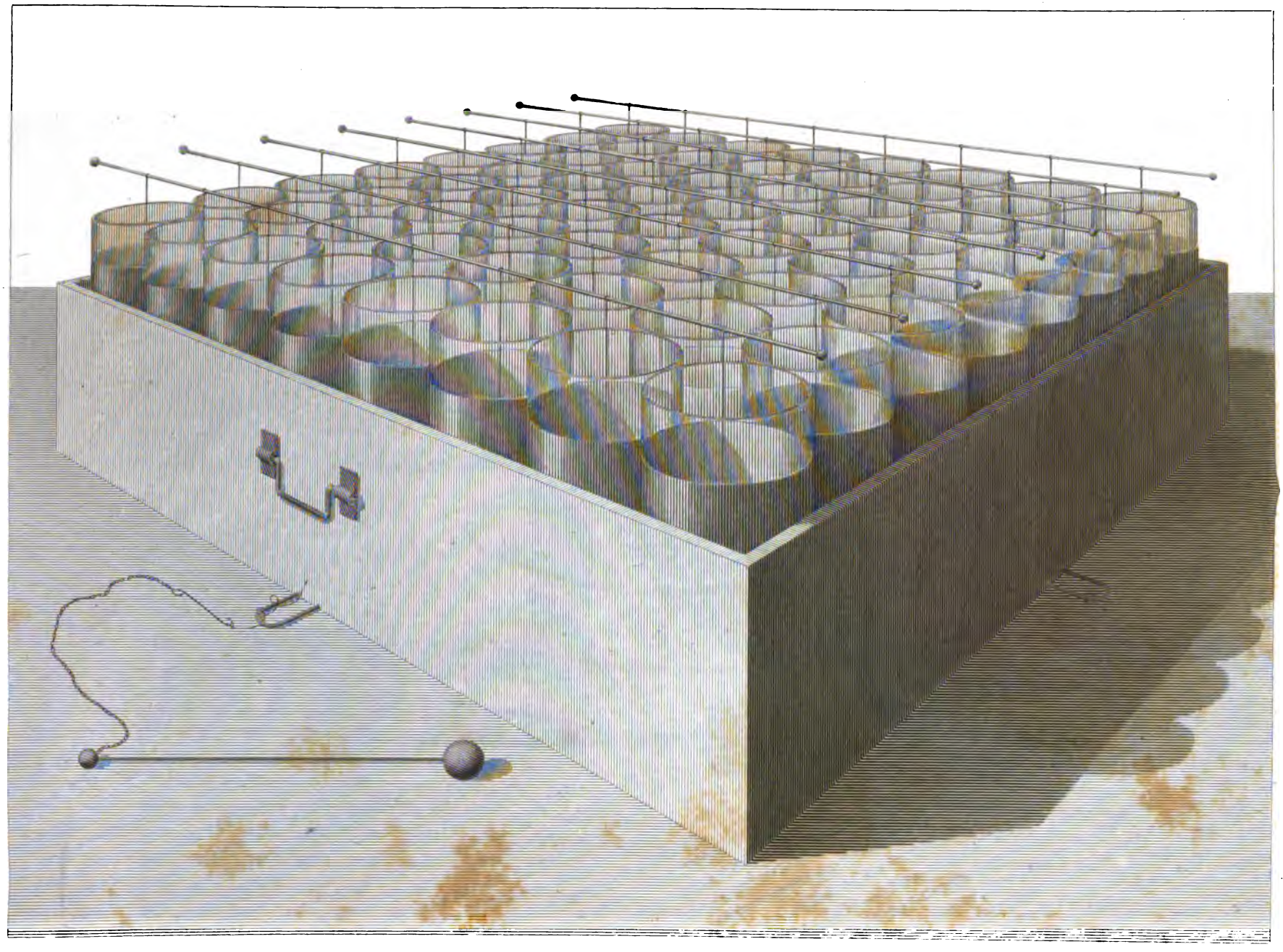
Lowry sculp.

PRIESTLEY'S BATTERY.



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Engraved by Wilson Lowry.

ELECTRICITY.

ELECTRICAL MACHINE & BATTERY.

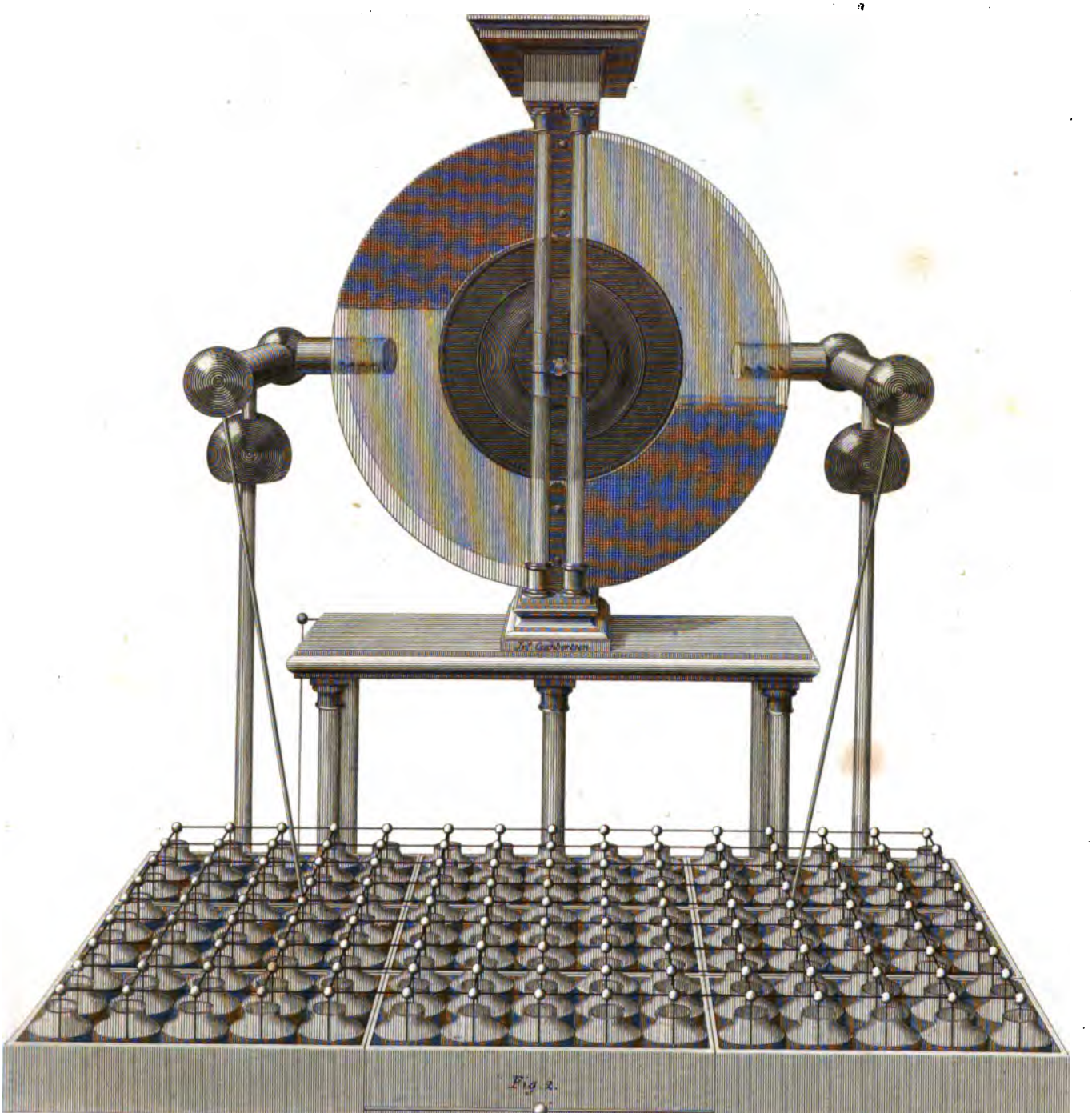

Fig. 2.

N°. 1. N°. 2. N°. 3.

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Engraved by Wilson Lowry.

ELECTRICITY.

CONDENSERS.

Fig. 4.

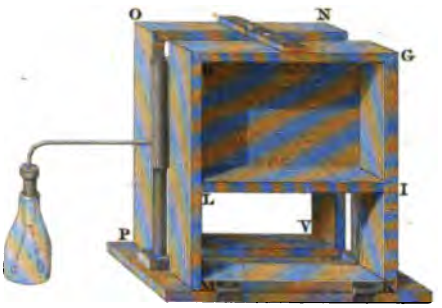


Fig. 5.

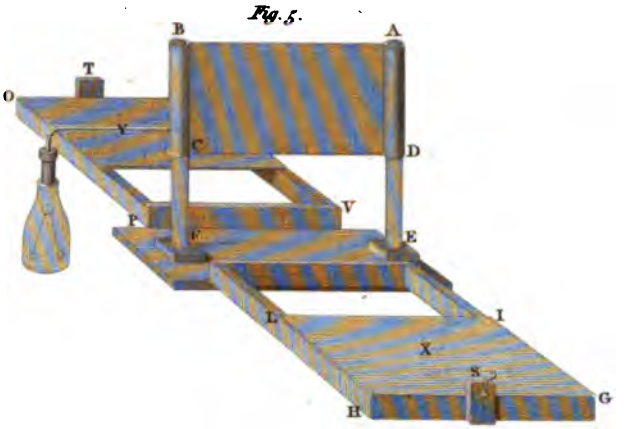


Fig. 6.

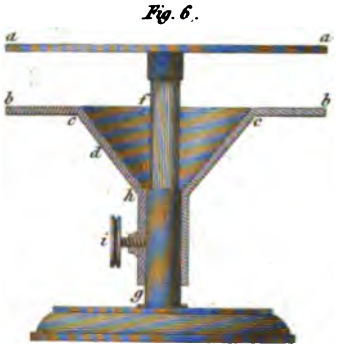


Fig. 7.

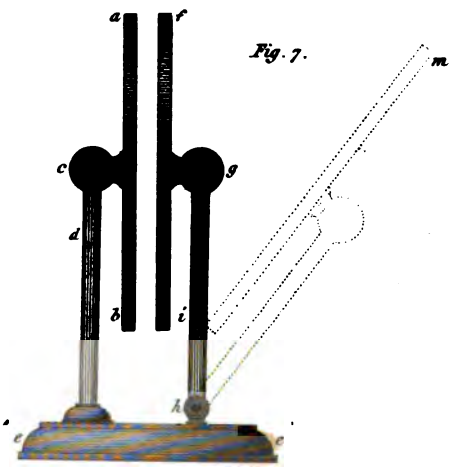


Fig. 8.

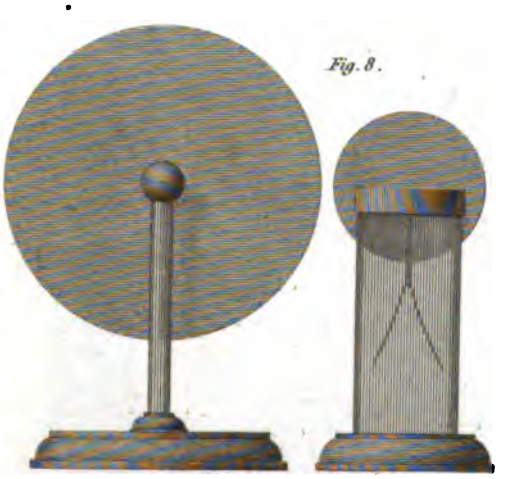
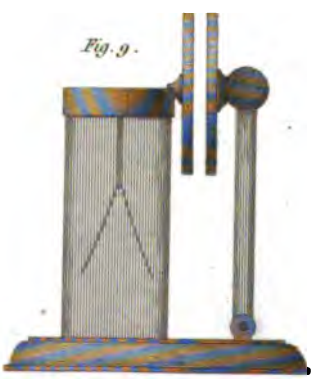


Fig. 9.



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ELECTRICITY.

DISCHARGER AND DOUBLER.

Fig. 10.

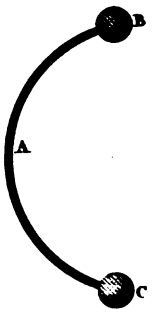


Fig. 11.

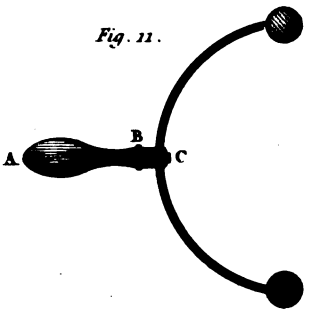


Fig. 12.

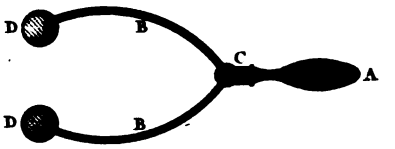


Fig. 13.

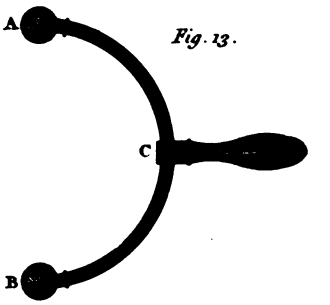


Fig. 14.

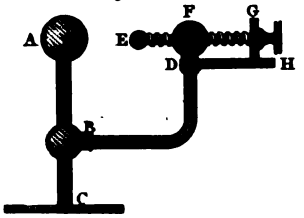


Fig. 15.

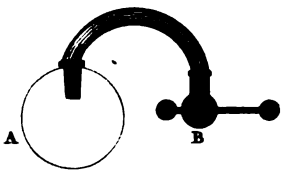
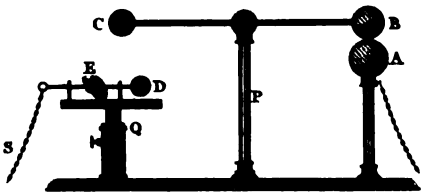


Fig. 16.



Mr. CAVALLO'S DOUBLER.

Fig. 23.

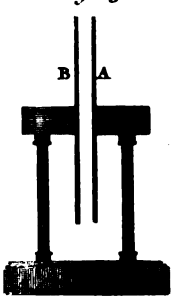


Fig. 22.

Fig. 21.

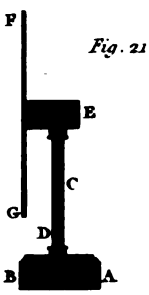


Fig. 17.

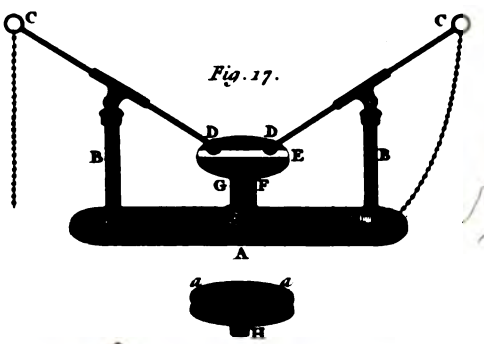


Fig. 18.

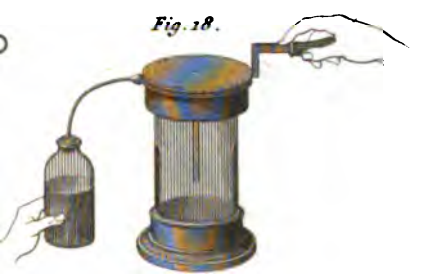


Fig. 24.

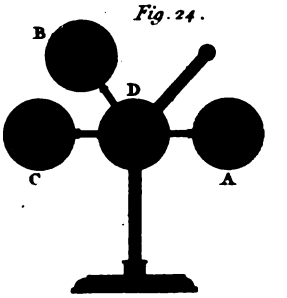
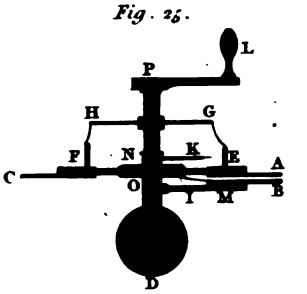


Fig. 20.

Fig. 19.

Fig. 25.



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ELECTRICITY.

ELECTRICAL EXPERIMENTS.

Fig. 26.

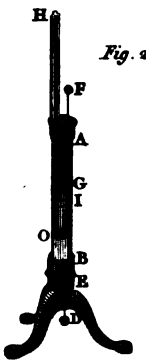


Fig. 27.

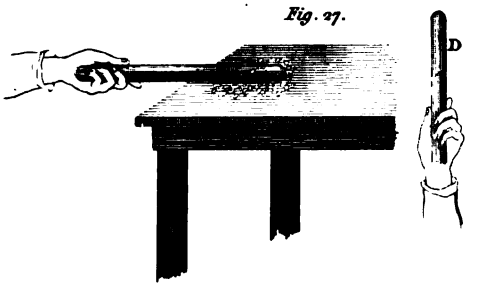


Fig. 28.

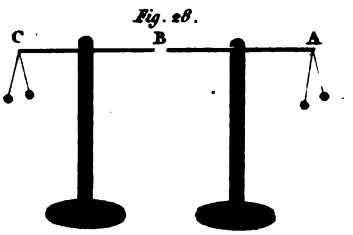


Fig. 29.

Fig. 30.

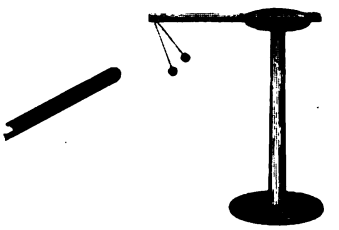


Fig. 31.

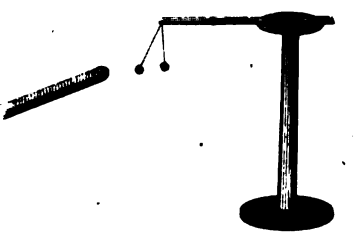


Fig. 32.

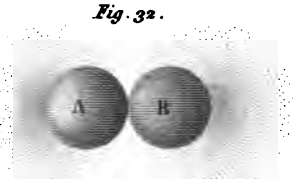


Fig. 33.

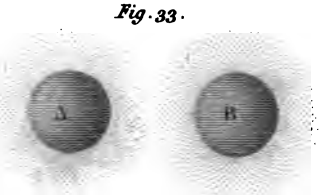


Fig. 34.

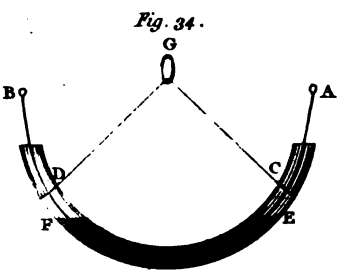


Fig. 35.

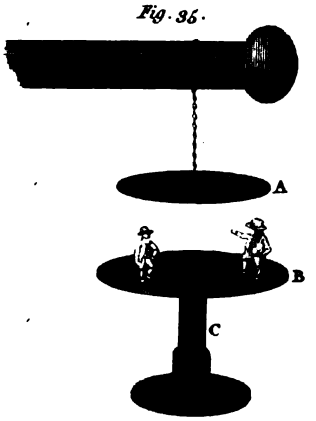


Fig. 36.

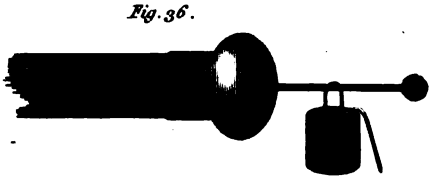
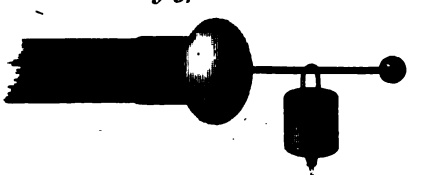


Fig. 37.



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ELECTRICITY.

ELECTRICAL EXPERIMENTS.

Fig. 38.

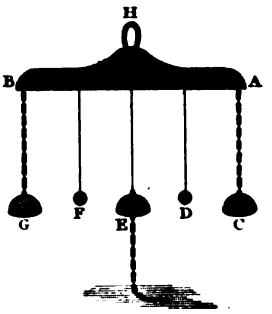


Fig. 39.

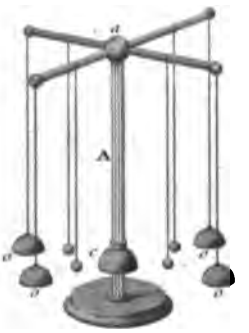


Fig. 40.

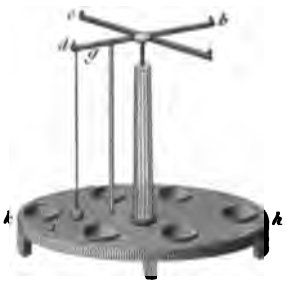
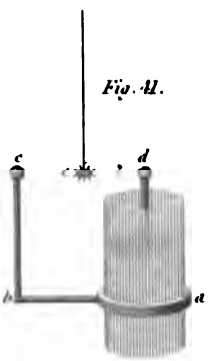


Fig. 41.



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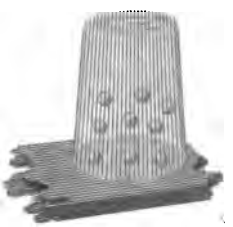


Fig. 43.

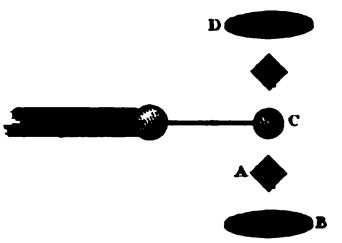


Fig. 44.

Fig. 45.

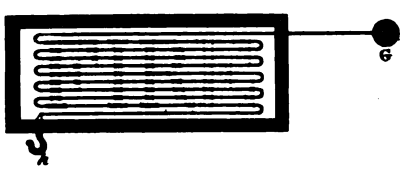
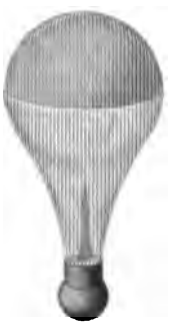


Fig. 46.

Fig. 47.



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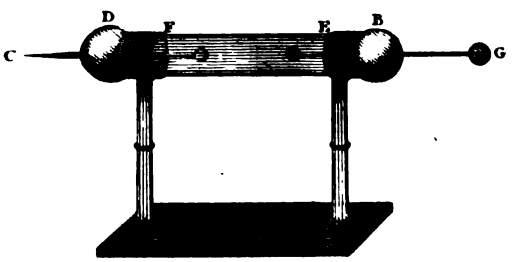
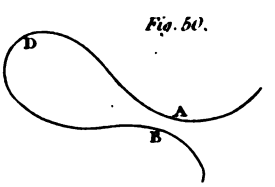


Fig. 49.

Fig. 50.



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ELECTRICITY.

CONFIGURATIONS MADE BY MEANS OF ELECTRICITY.

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ELECTRICITY.

EXPERIMENTS.

Fig. 51.

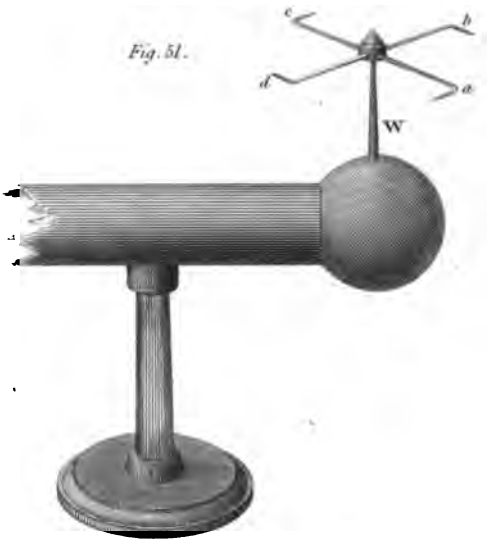
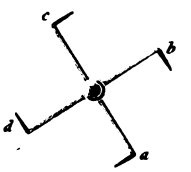


Fig. 52.

ELECTRICAL Flyers.



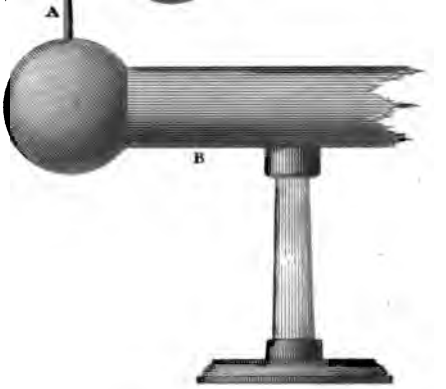


Fig. 53.

INFLAMABLE AIR Pistol.

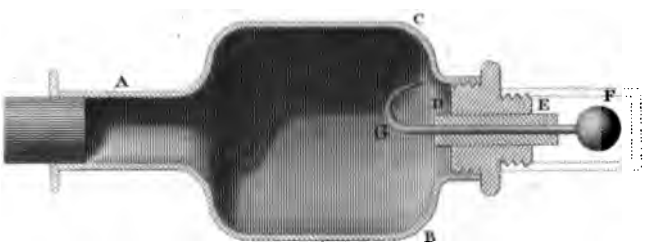
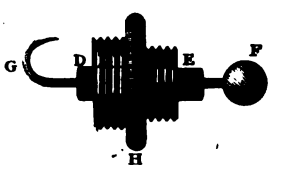


Fig. 54.



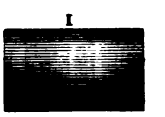
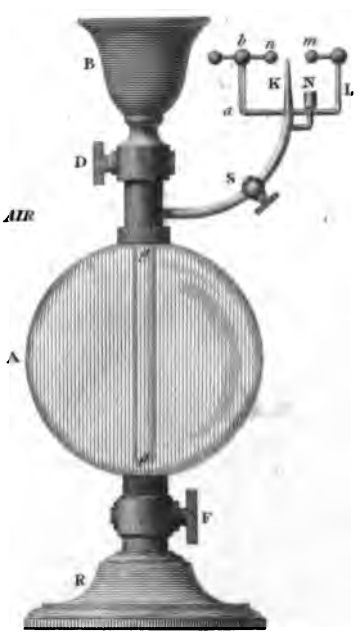
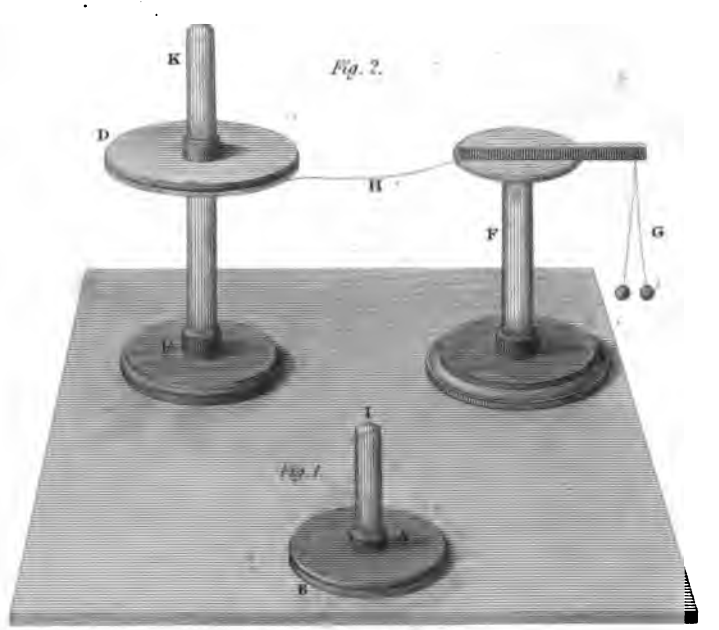


Fig. 55.

Mr. Volta's
INFLAMABLE AIR
Lamp.



ELECTROPHORUS.



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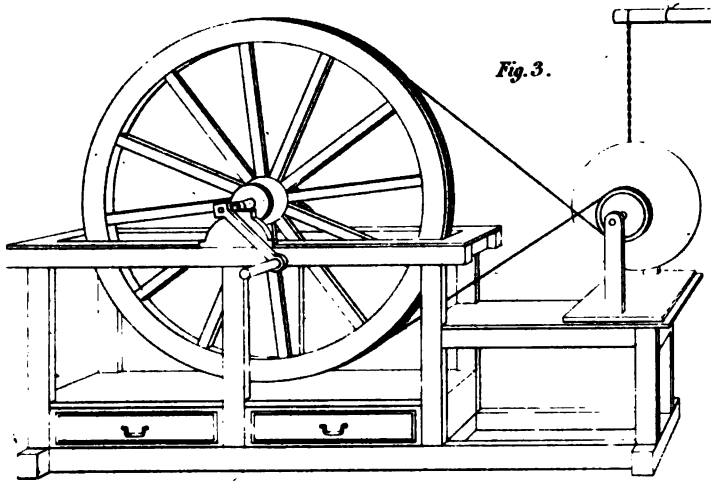
ELECTRIC MACHINES.

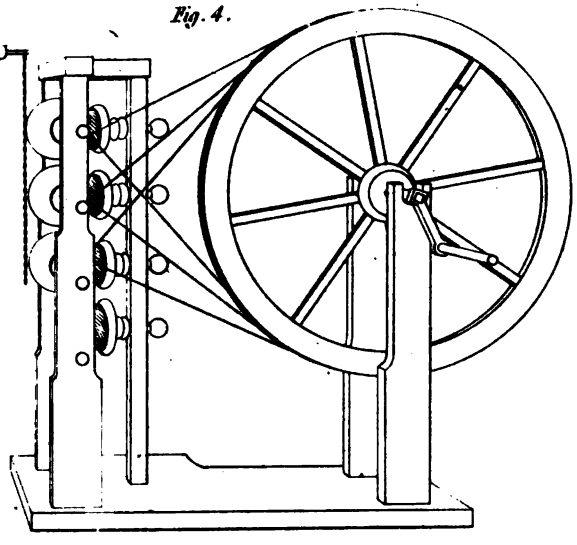
ABBE NOLLET'S.

Fig. 3.



Dr WATSON'S.

Fig. 4.



Mr HAWKSBEE'S.

Fig. 2.

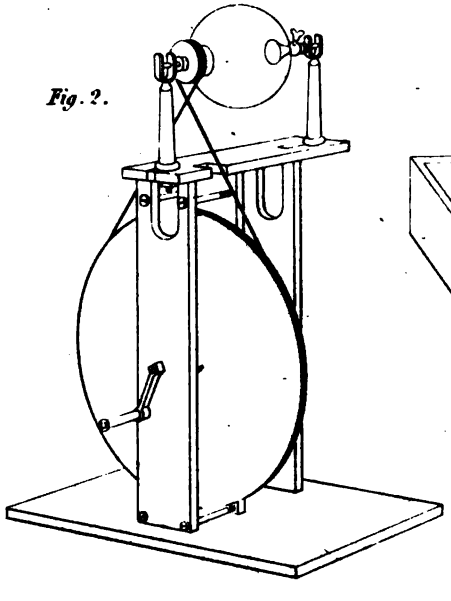
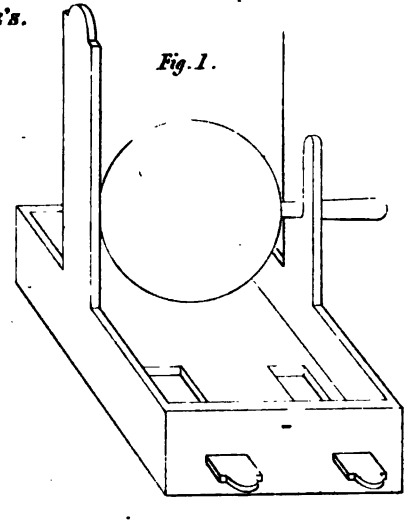
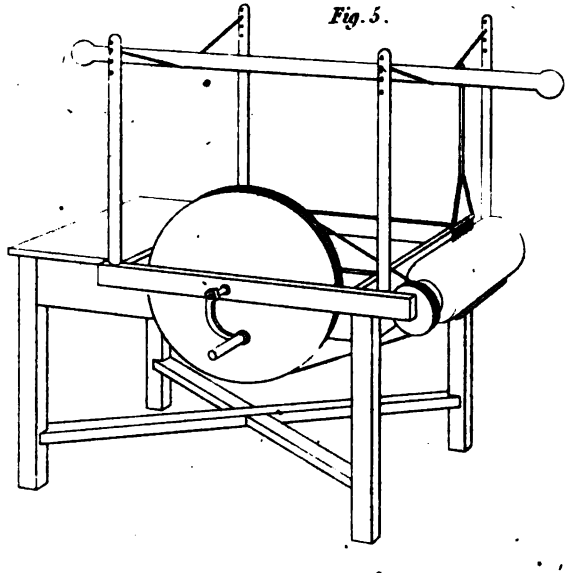


Fig. 1.



Mr WILSON'S.

Fig. 5.



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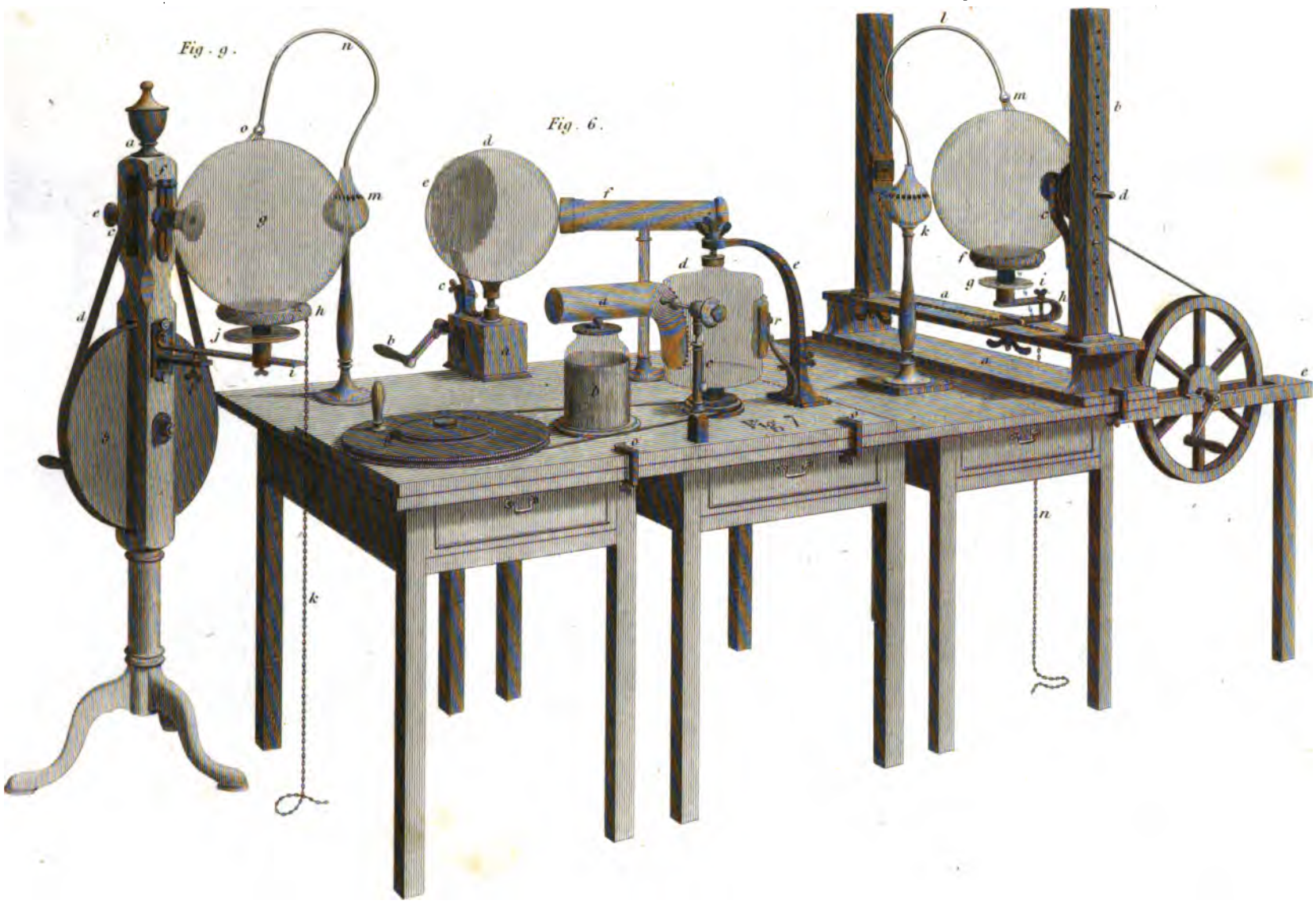
ELECTRIC MACHINES.

Fig. 8.



J. Farey Junr. delin.

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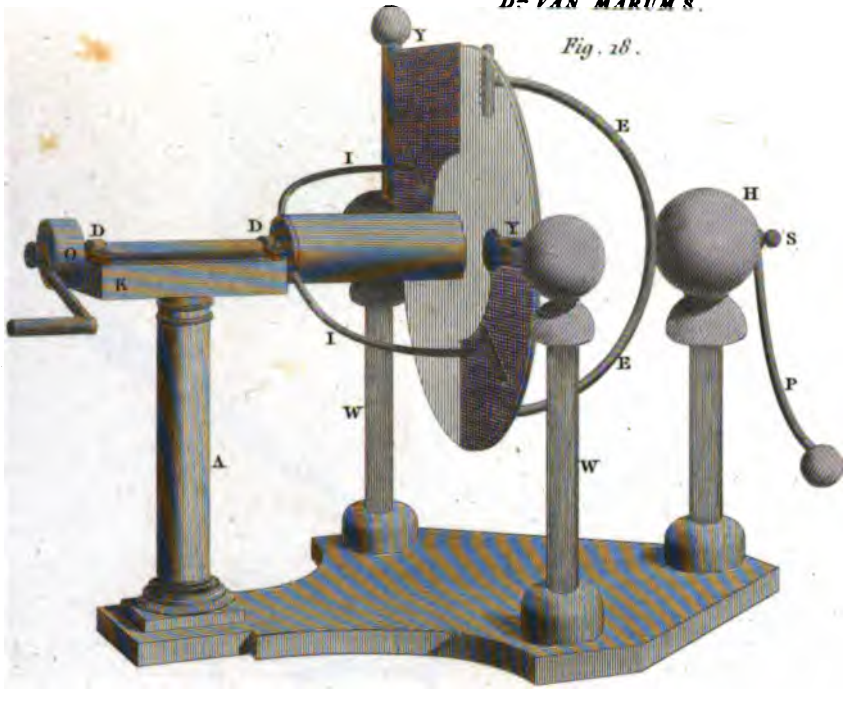
Dr VAN MARUM's.

Fig. 18.

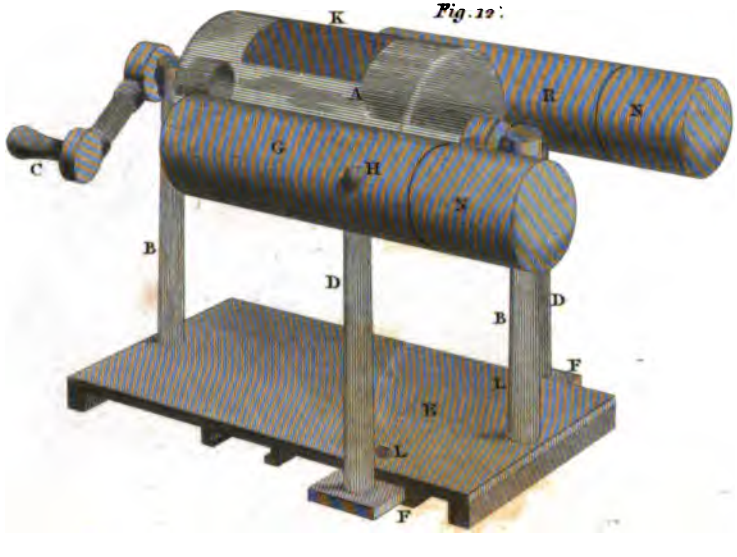


M.r BECCARIA's.

Fig. 10.

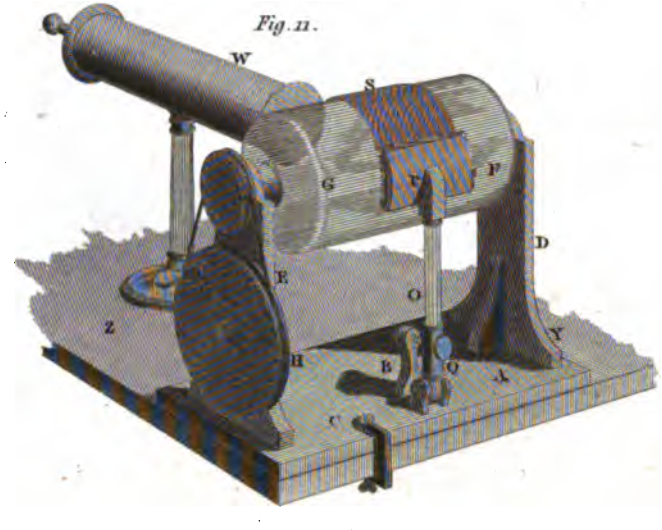
Mr NAIRNE's.

Fig. 19.



COMMON MACHINE.

Fig. 11.



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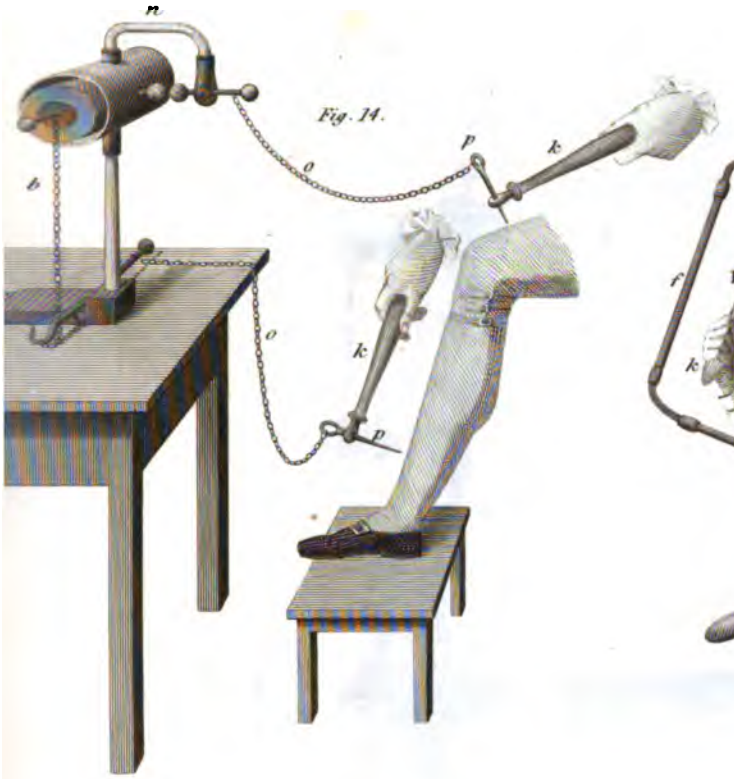

Fig. 14.

Fig. 13.

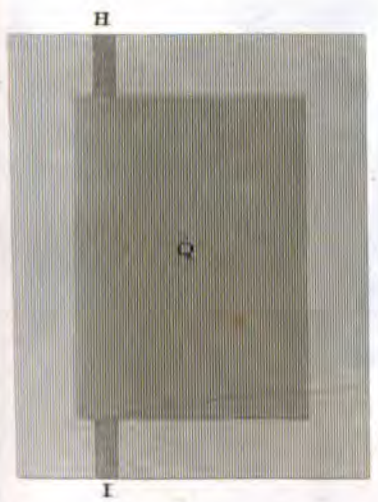

Fig. 16.

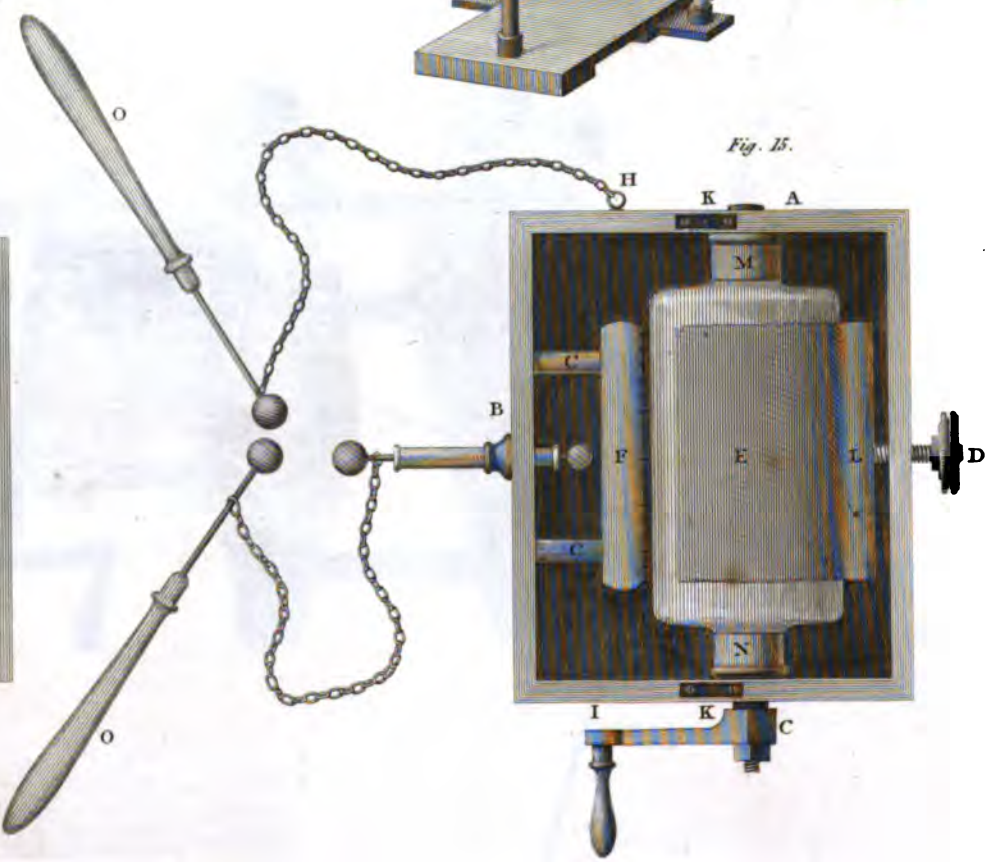

Fig. 15.

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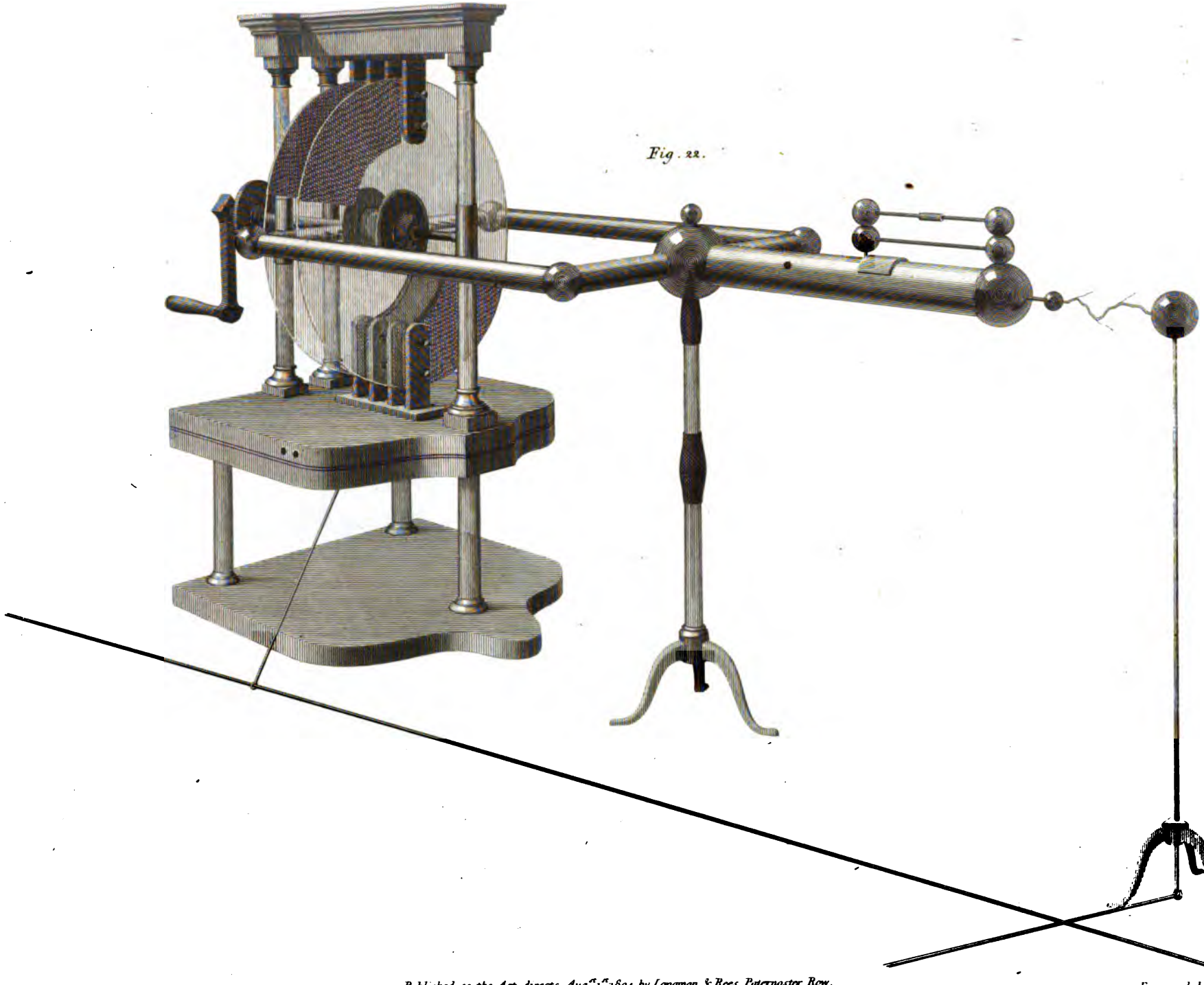

Fig. 22.

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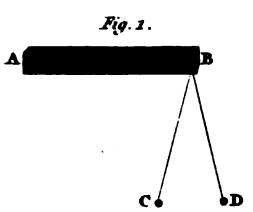
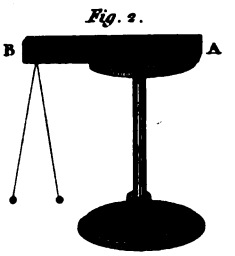
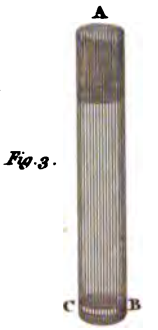
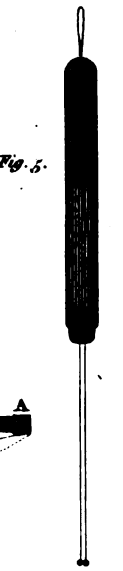
ELECTRICITY.

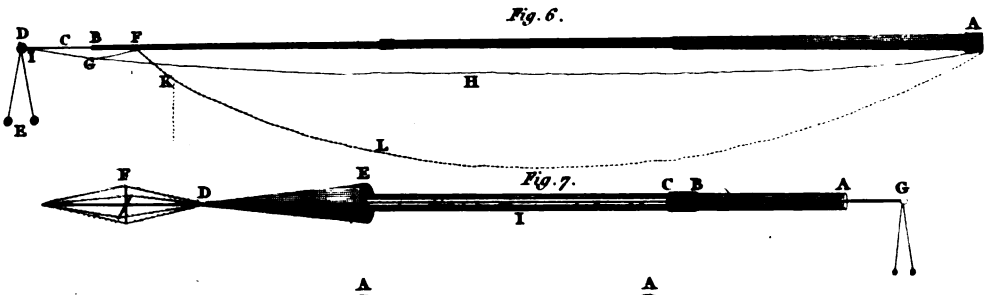
ELECTROMETER.

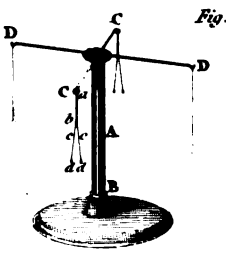


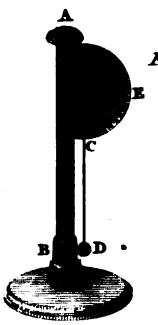


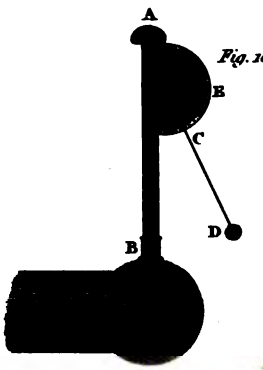


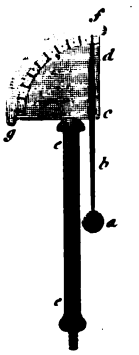


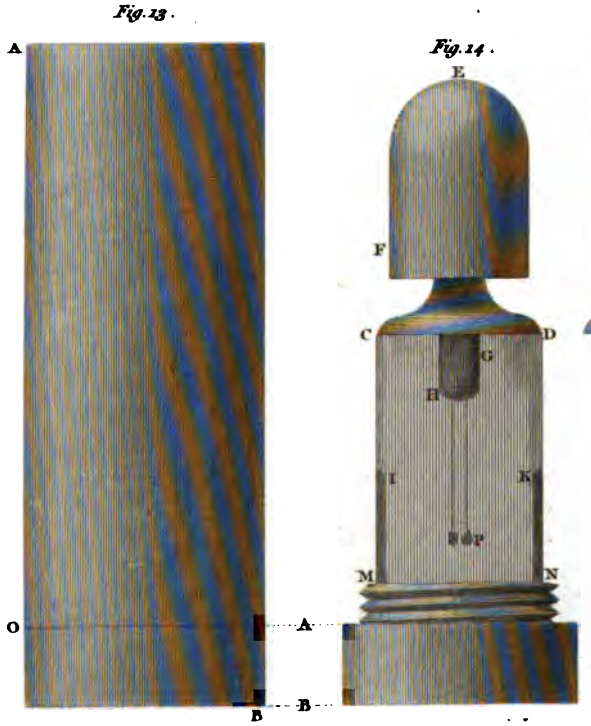


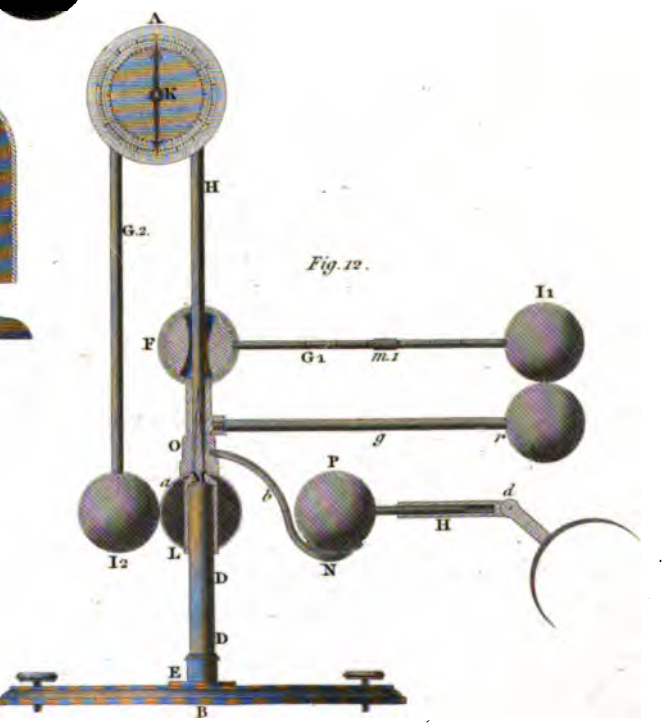












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ELECTRICITY.

ELECTROMETER.

For Figs. 13. 14. & 15. see Pl. XII.

Fig. 16.

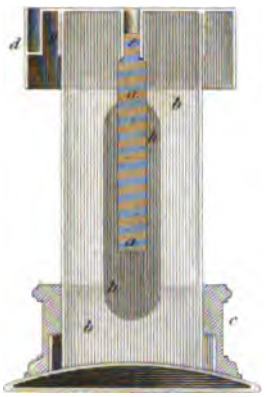


Fig. 17.

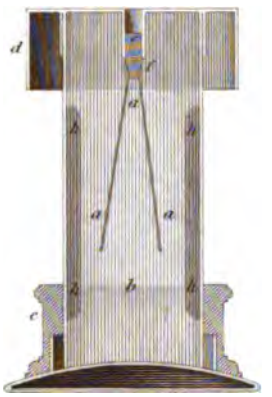


Fig. 18.

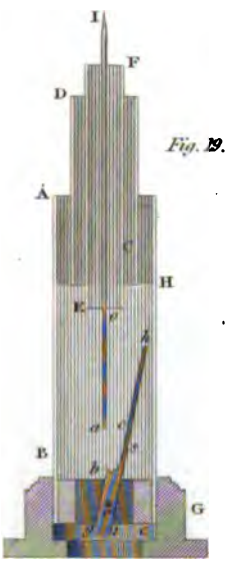


Fig. 19.

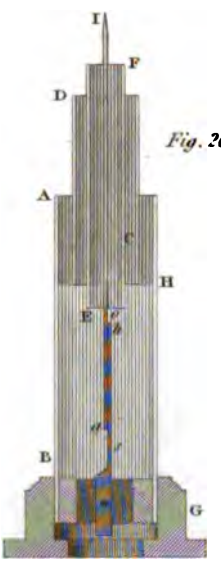
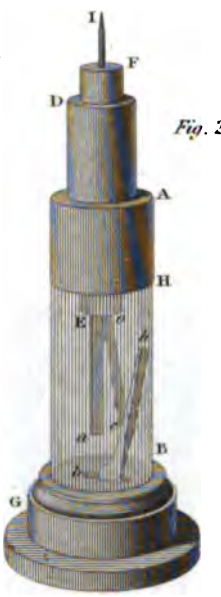


Fig. 20.



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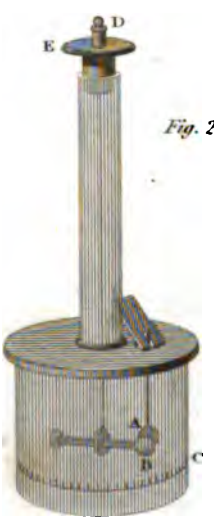
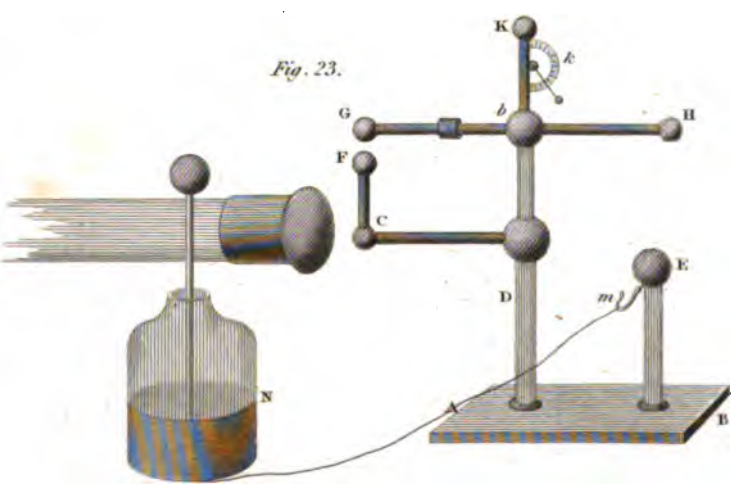


Fig. 22.

Fig. 23.



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ELECTRICITY.

EDICAL ELECTRICITY.

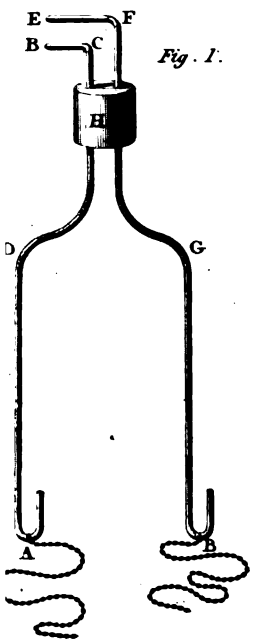


Fig. 1.

THUNDER House.

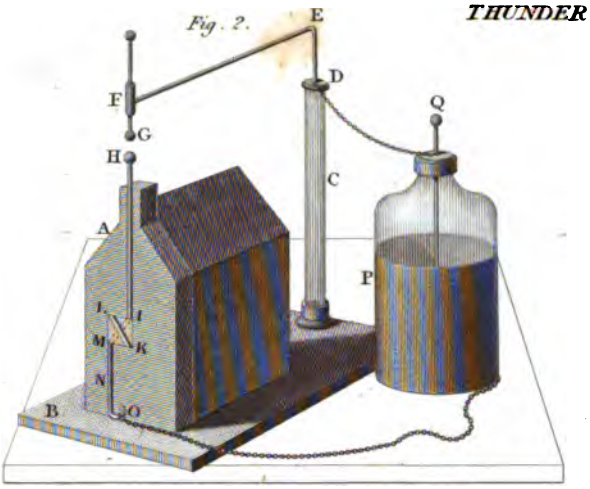


Fig. 2.

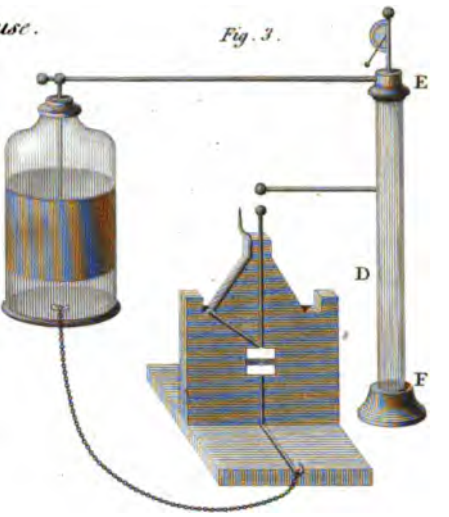


Fig. 3.

TORPEDO.

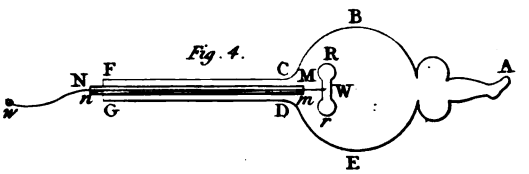


Fig. 4.

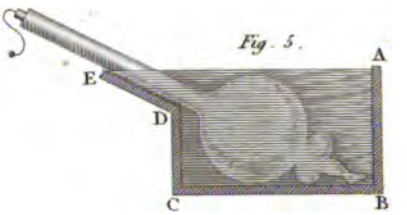
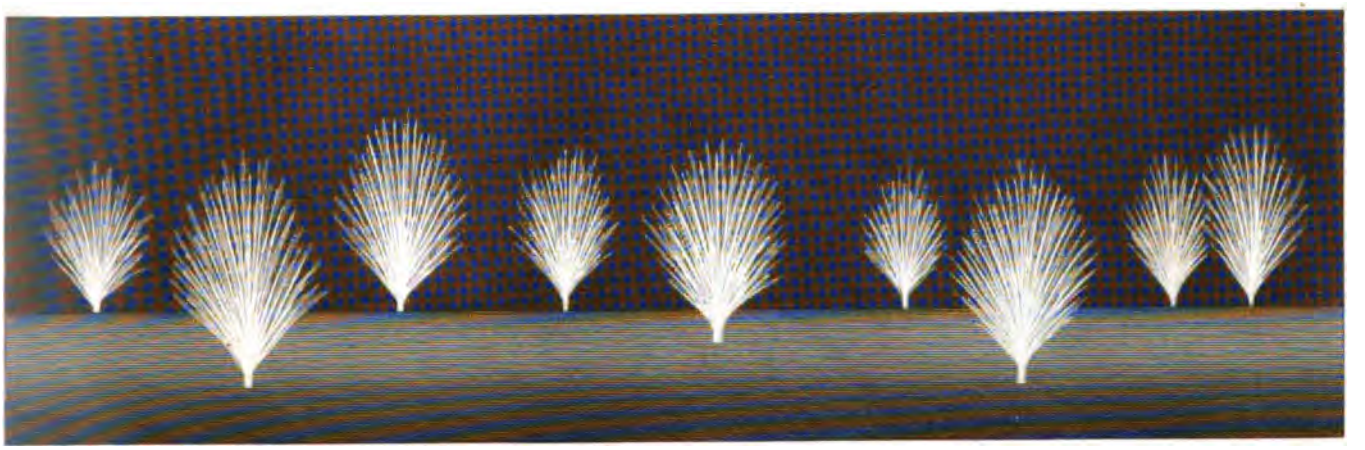


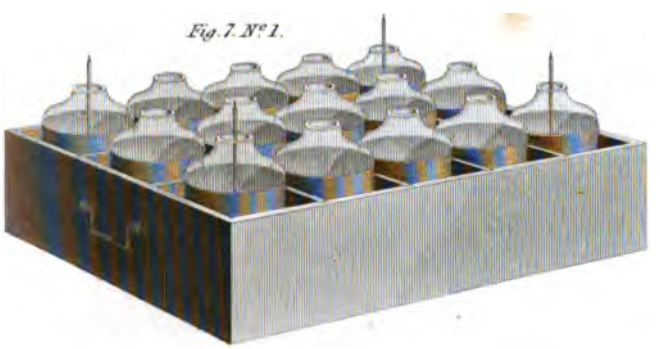
Fig. 5.

BRUSH.

Fig. 6.



Inside connecting Frame of Teylers BATTERY.



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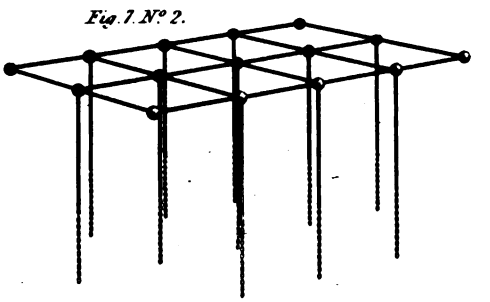


Fig. 7. N°. 2.

Published as the Act directs, 1819, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.

Lowry, Sc

ENGINE.

Mr. R. SALMON'S WEIGHING MACHINE.

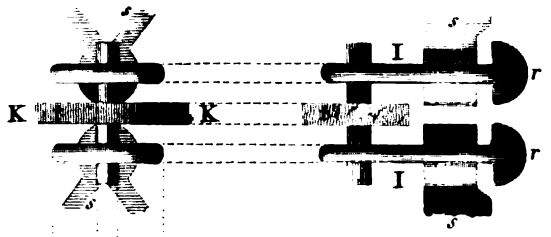
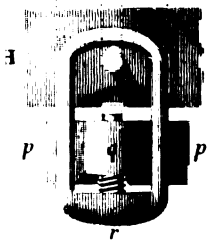
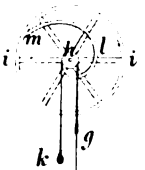
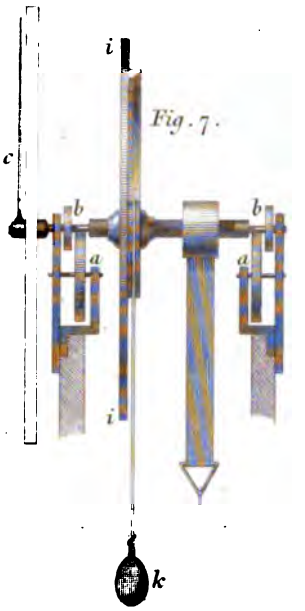


Fig. 5.







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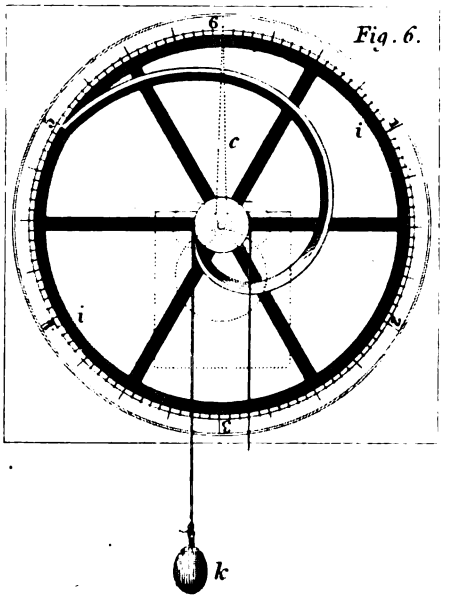

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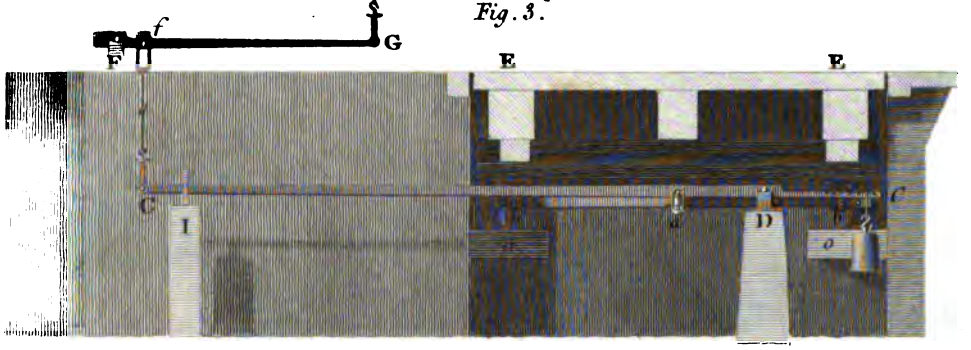

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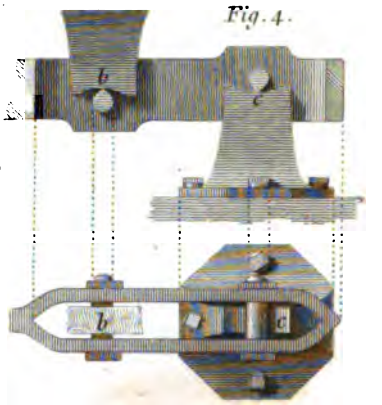

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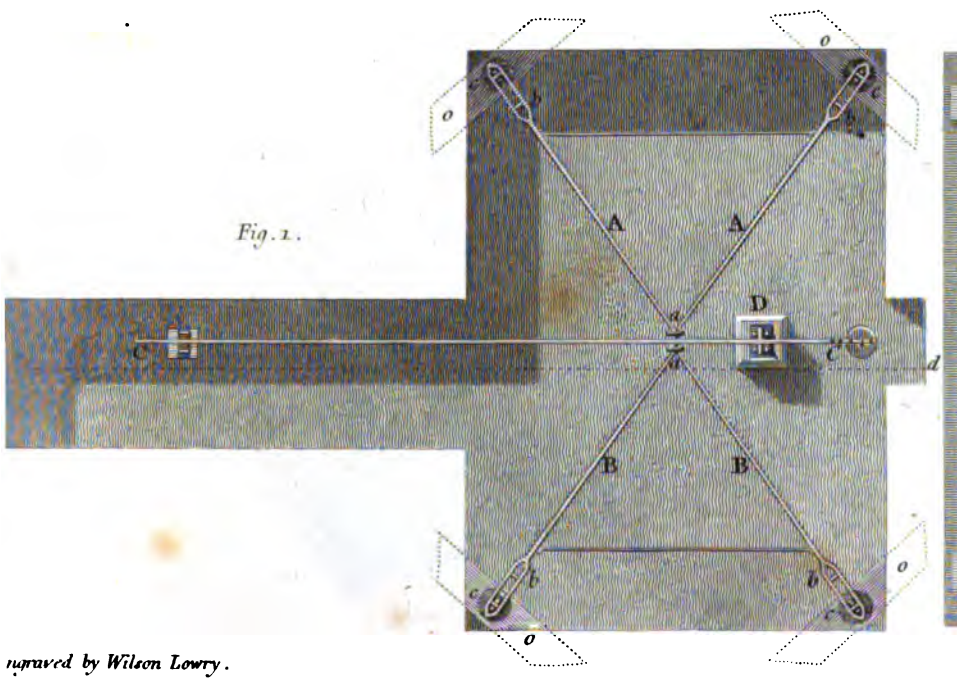


Fig. 1.

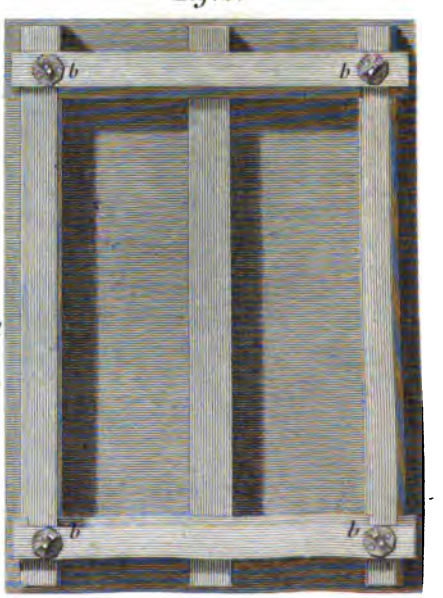
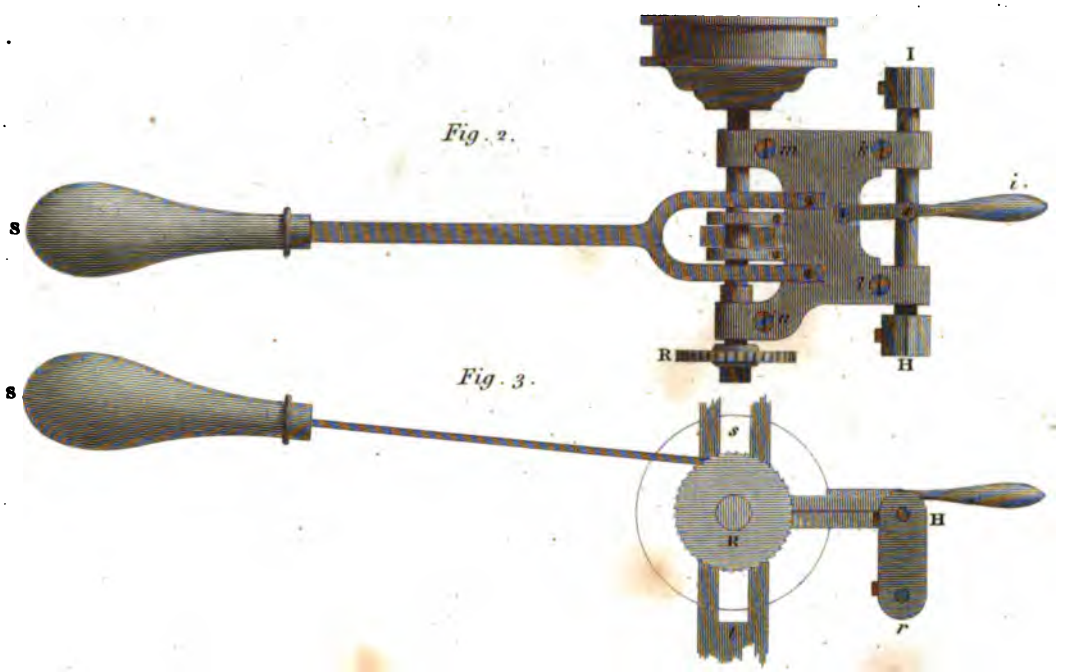


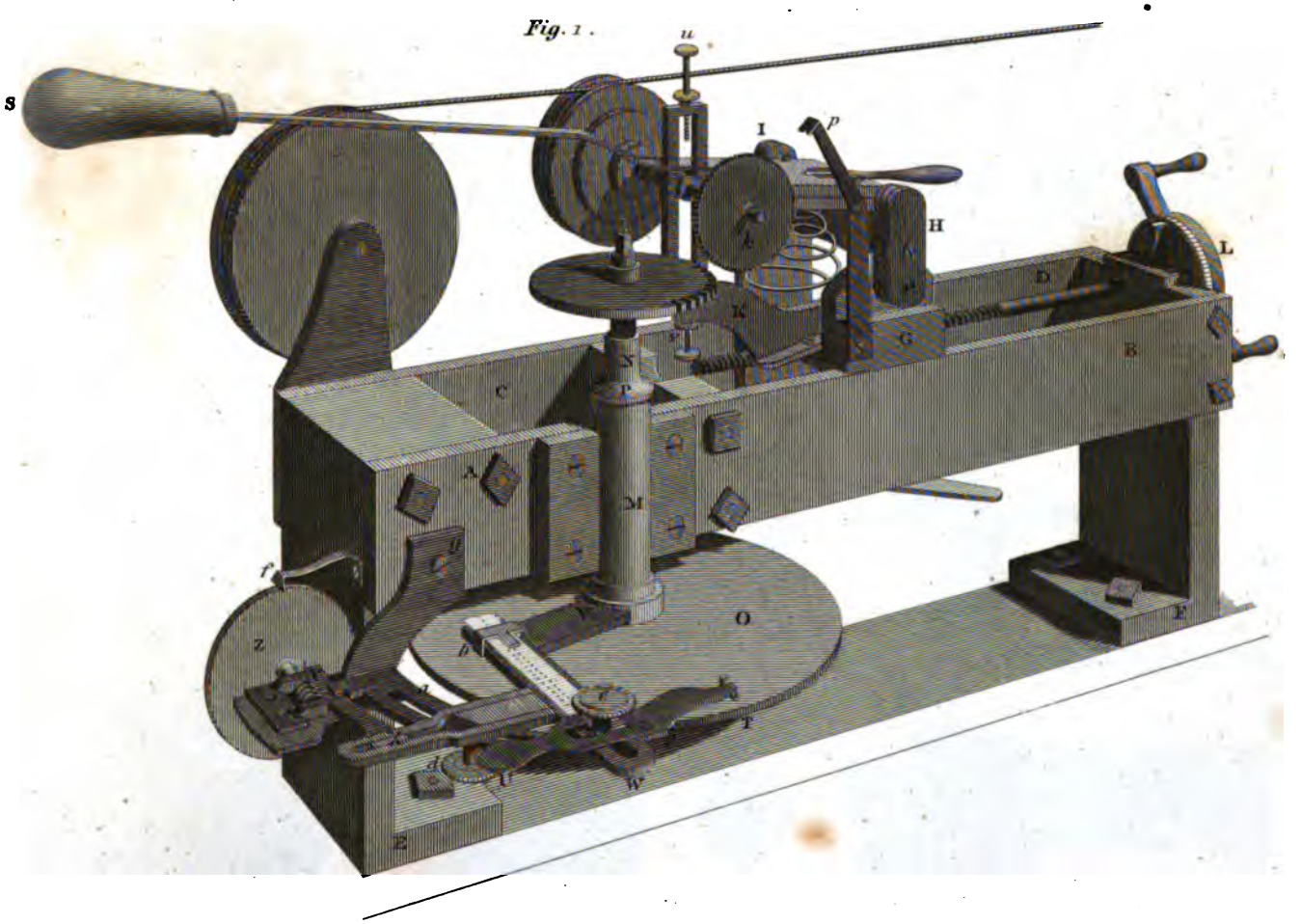
Fig. 2.

Engraved by Wilson Lowry.

Published as the Act directs. Jan.y 1. 1803. by Longman & Rees. Paternoster Row

Cutting Engine by Hindley.





Fairey Junr. delin. Published as the Act directs, 1813, by Longman, Hurst, Rees & Cº Paternoster Row. Engraved by W. Lowry.

ENGINES.

CUTTING ENGINE.

Fig. 2.

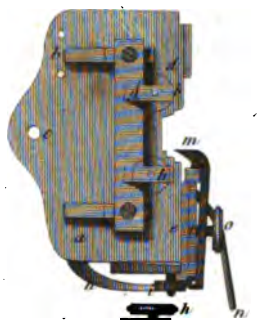


Fig. 4.

Fig. 5.

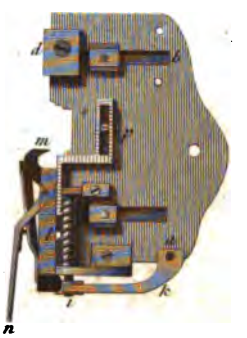
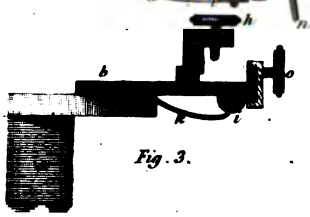


Fig. 3.



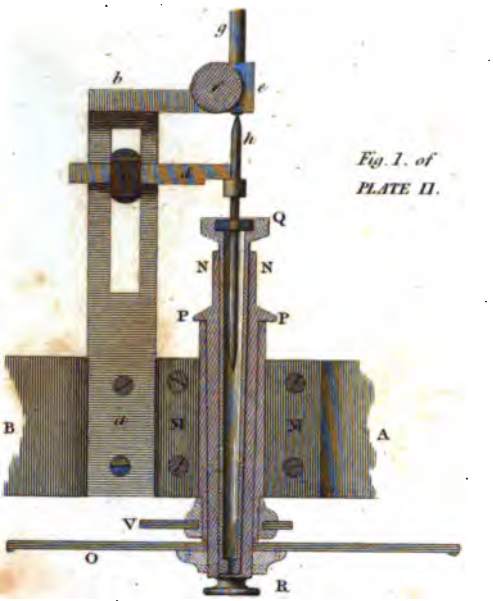
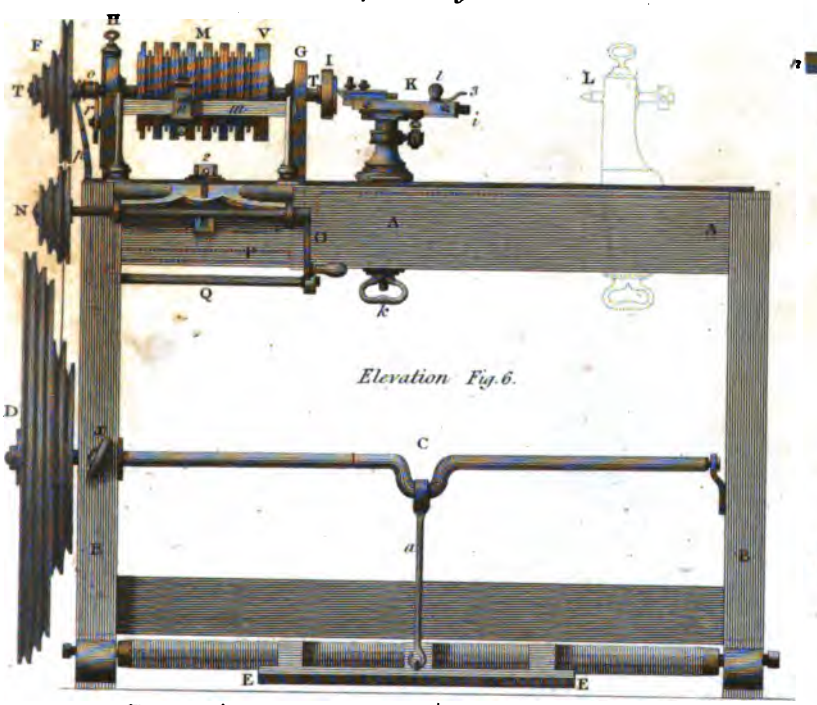


Fig. 1. of PLATE II.

Rose Engine or figure Lathe made by Messrs

Holtzapffell & Deyerlein.



Elevation Fig. 6.

Fig. 7.

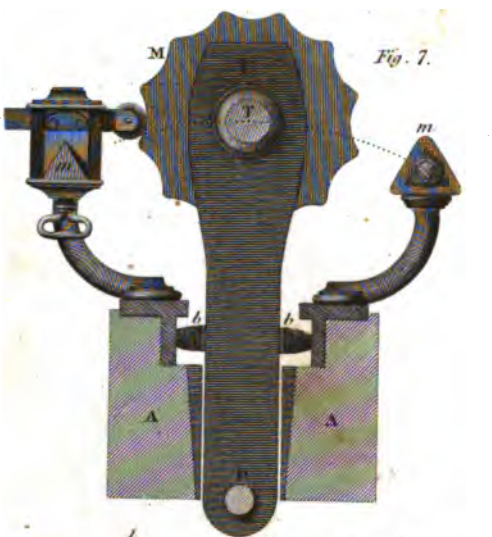
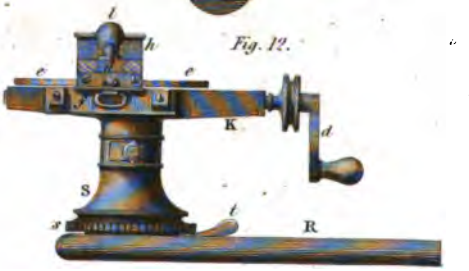


Fig. 12.



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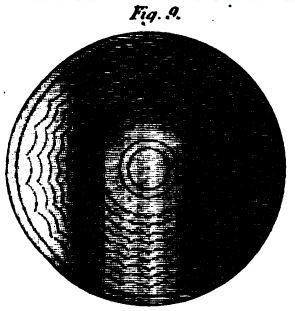

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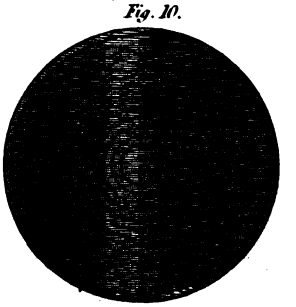


Fig. 10.

Slide rest.

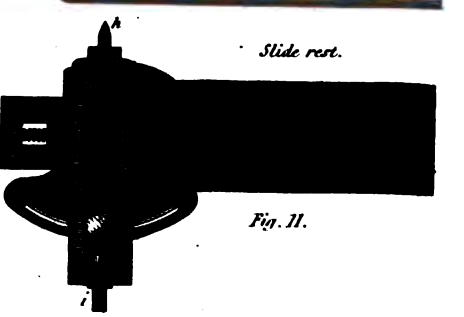


Fig. 11.

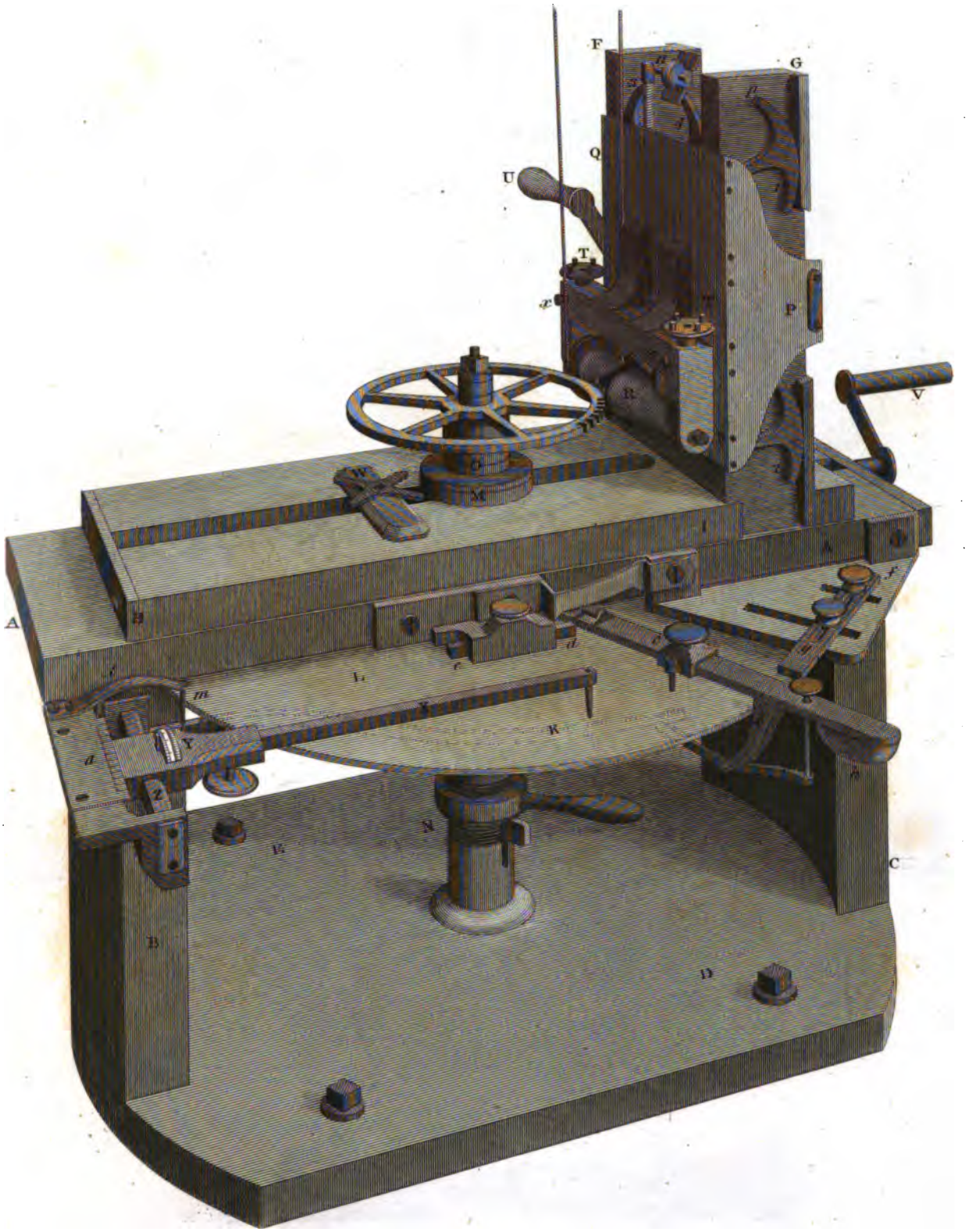
J. Farey Junr. delin.

Published as the Act directs, 1816, by Longman, Hurst, Rees, Orme, & Brown, Paternoster Row.

Lowry Sc.

ENGINES.

cutting ENGINE by Rehi.



Drawn by J. Farey Junr. from the original ½ real size.

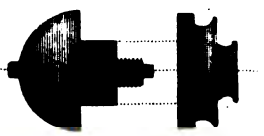
Published as the Act directs, 1819. by Longman, Hurst, Rees & Cº Paternoster Row.

Engraved by Lowry.

ENGINES.

CUTTING ENGINE by REHE

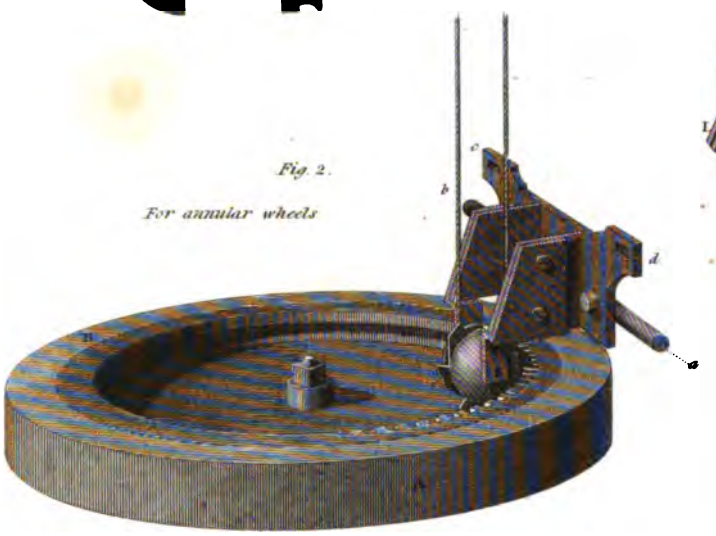
Fig 3.



Short arbor

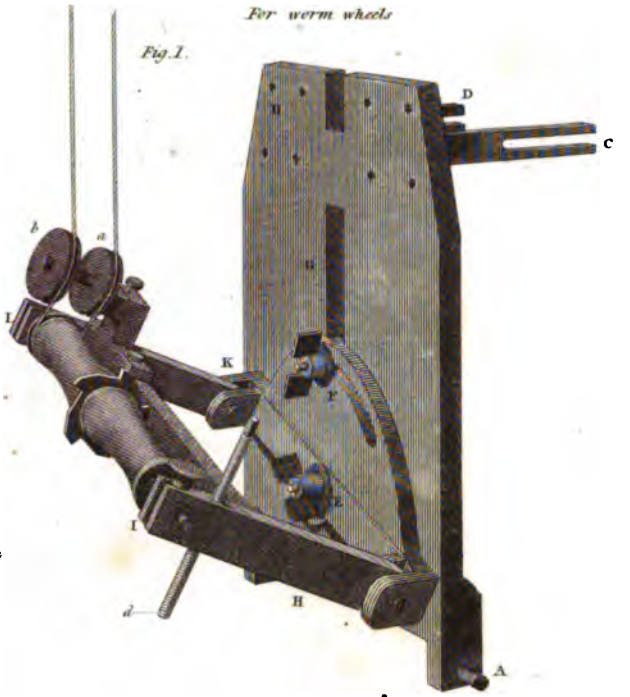
Fig. 2.

For annular wheels



For worm wheels

Fig. 1.



Wheel fixed on the arbor of the Engine

Fig. 4.

For Racks

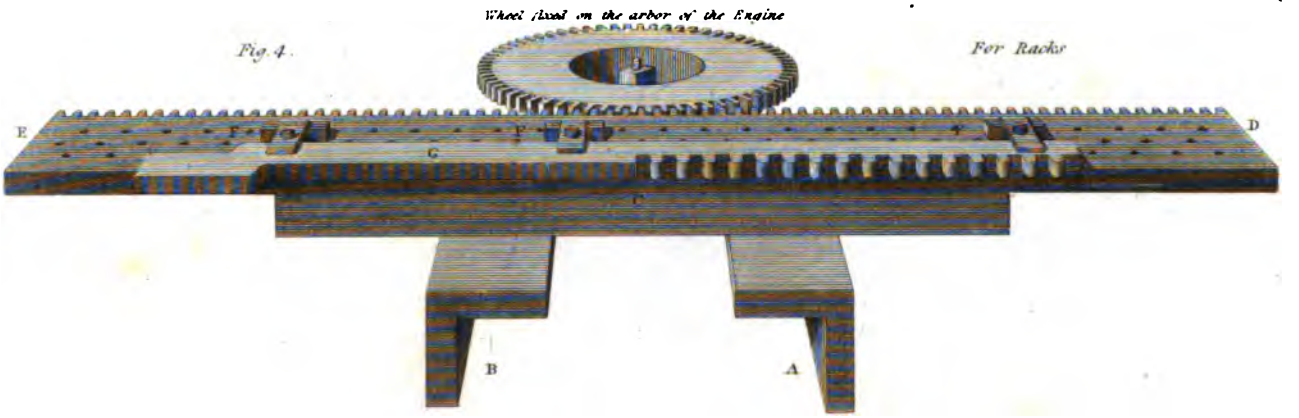
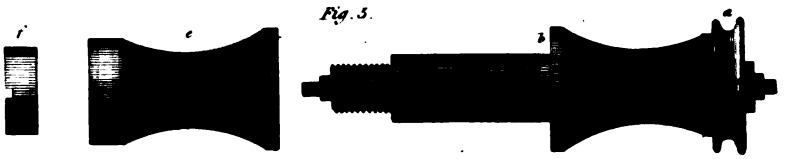


Fig. 5.



Cutter arbor

Leary sculp.

Published as the Act directs 1818 by Longman Hurst Rees Orme & Brown Paternoster Row

ENGINES.

For sharpening Cutters.

BY REHE.

Fig. 1.

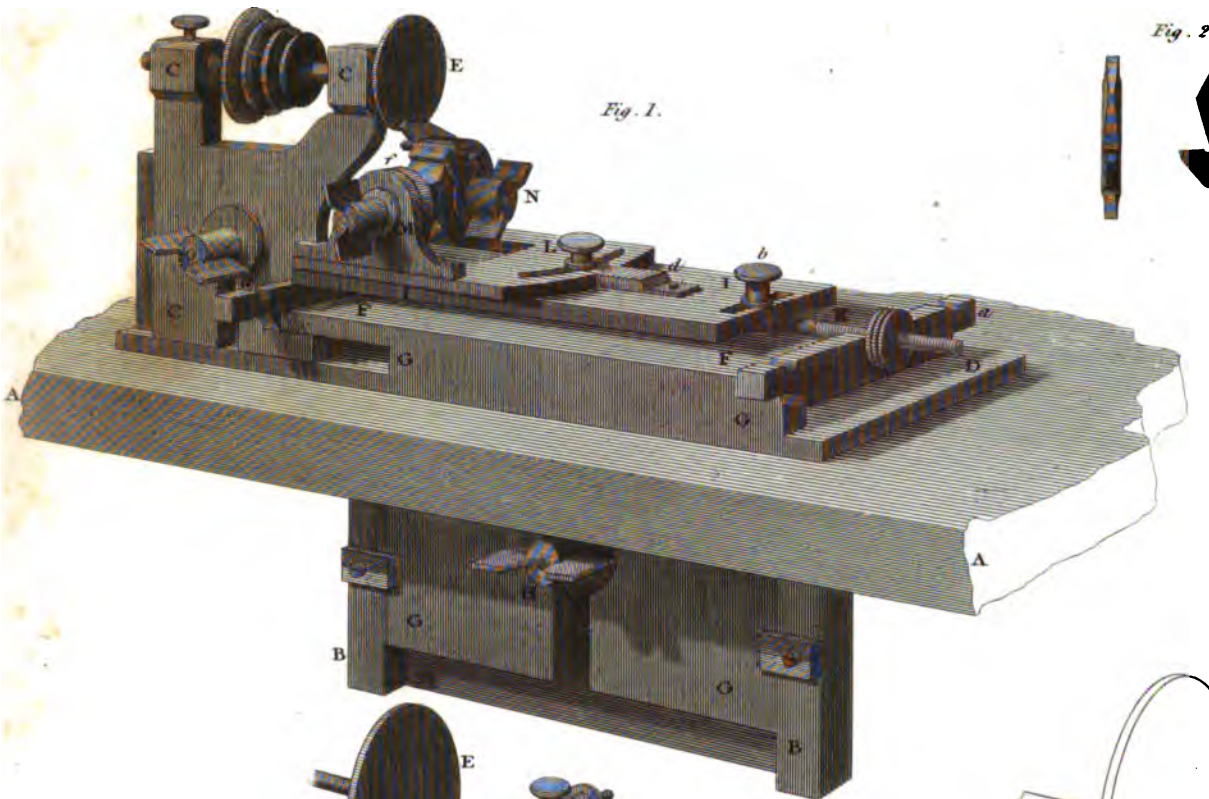


Fig. 2.

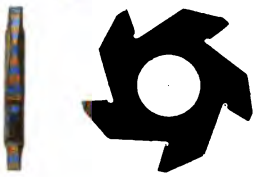


Fig. 3.

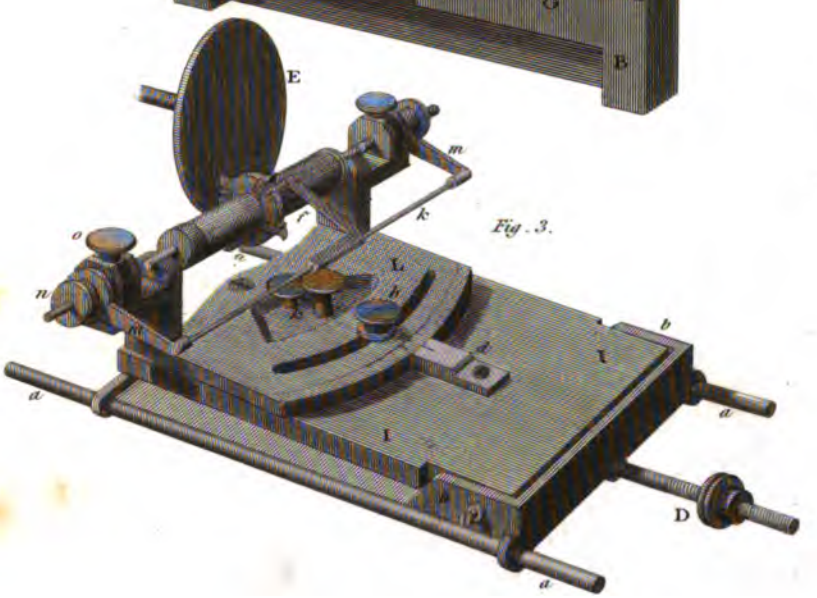
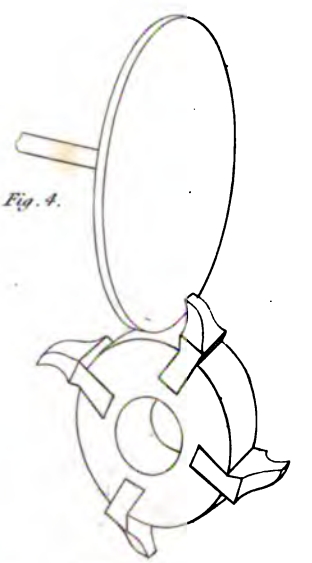


Fig. 4.



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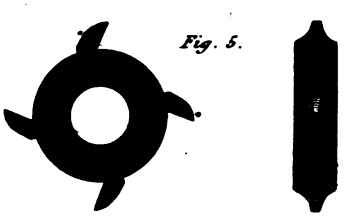

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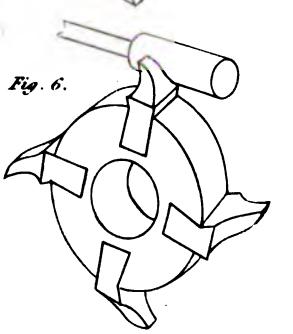
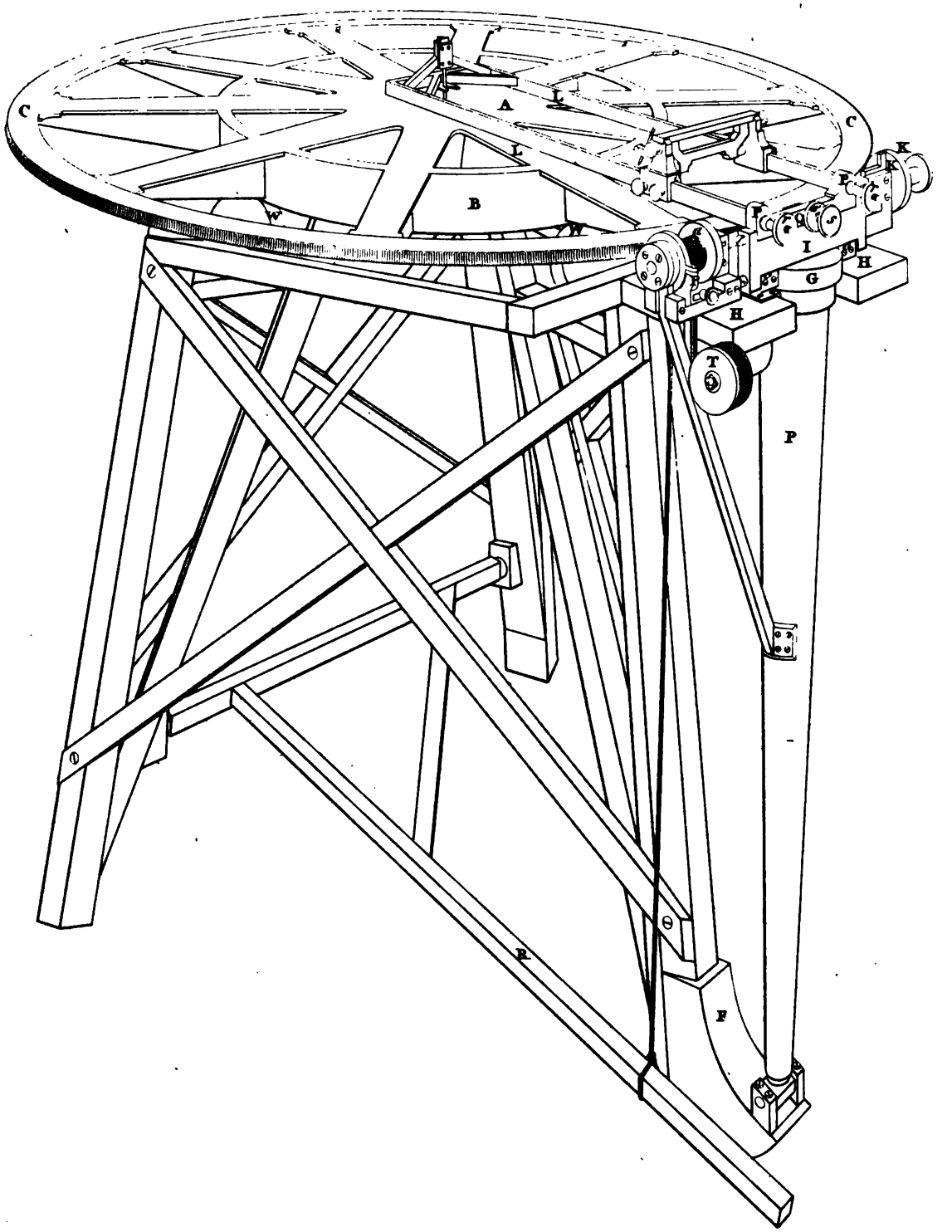


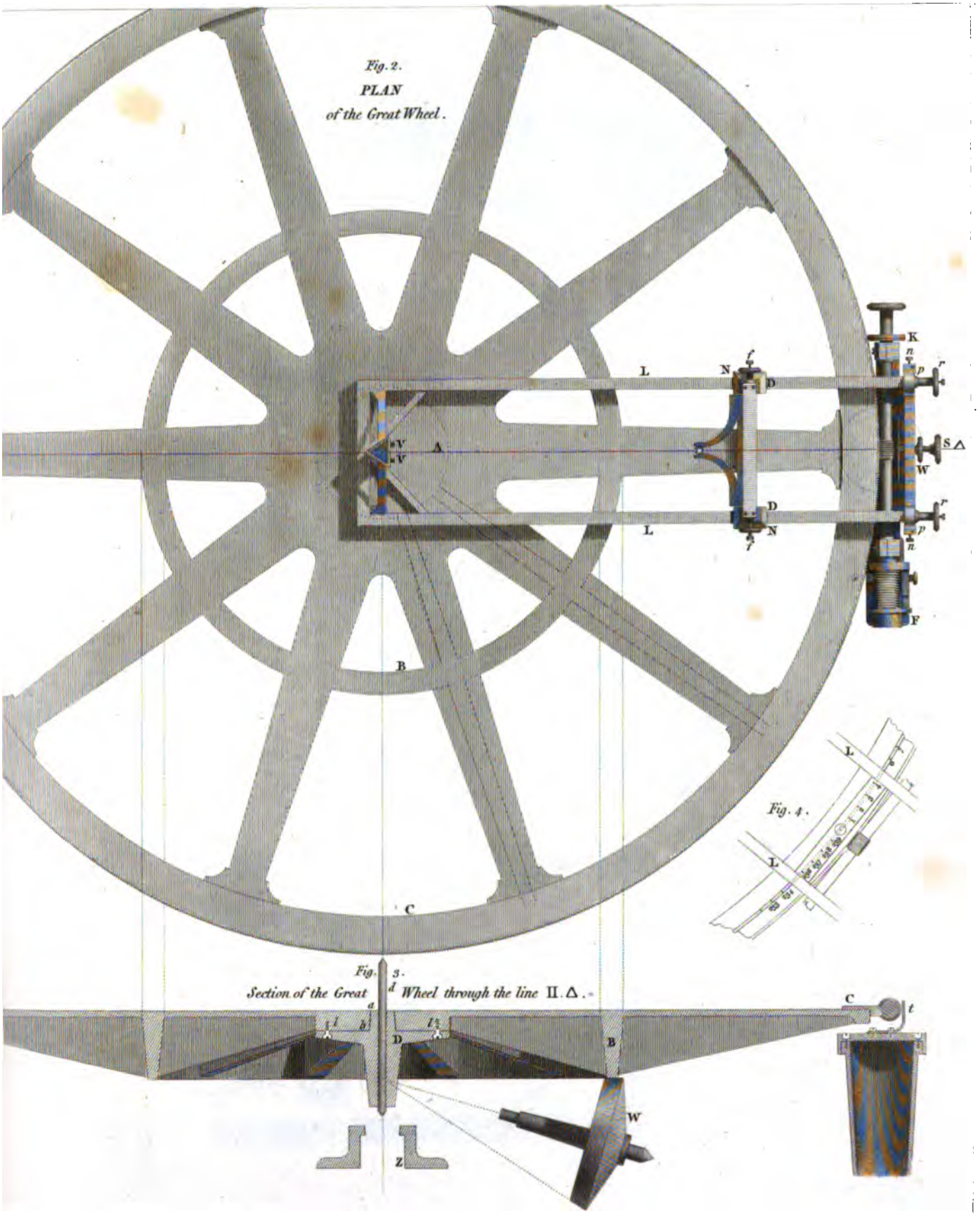
J. Farey, Junr. delin. *Published as the Act directs, 1818, by Longman, Hurst, Rees, Orme & Brown Paternoster Row.* *Lowry Sc.*

A perspective View of Mr. RAMSDEN'S dividing Engine.



Published as the Act directs, 1810, by Longman, Hurst, Rees and Orme, Paternoster Row. *Engraved by Wilson Lowry.*

Mr. RAMSDEN'S DIVIDING ENGINE.



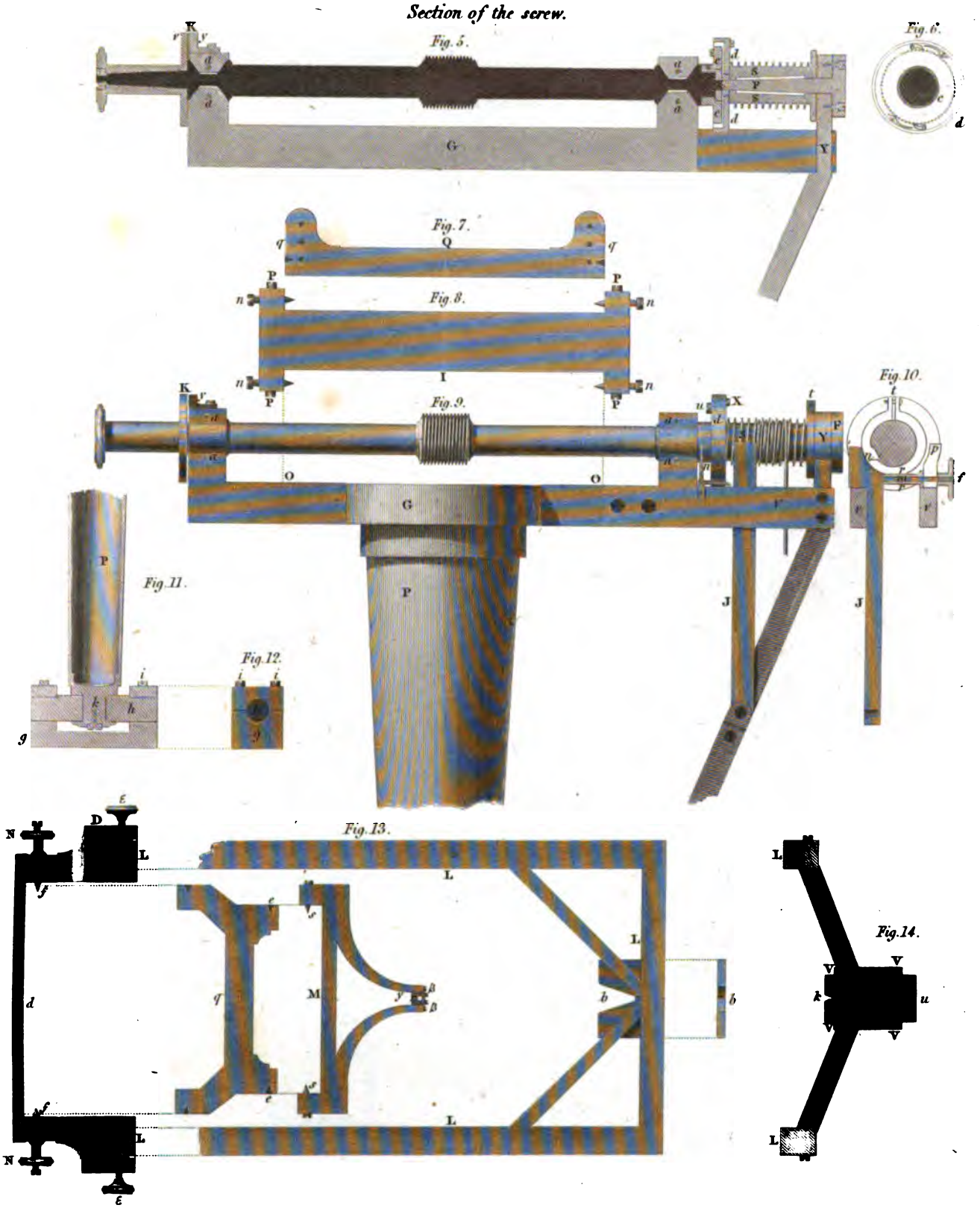
Published as the Act directs, 1810, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

ENGINES.

Mr. RAMSDENS DIVIDING ENGINE.

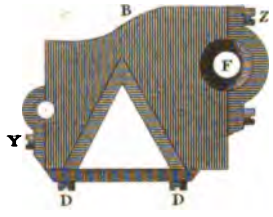
Section of the screw.



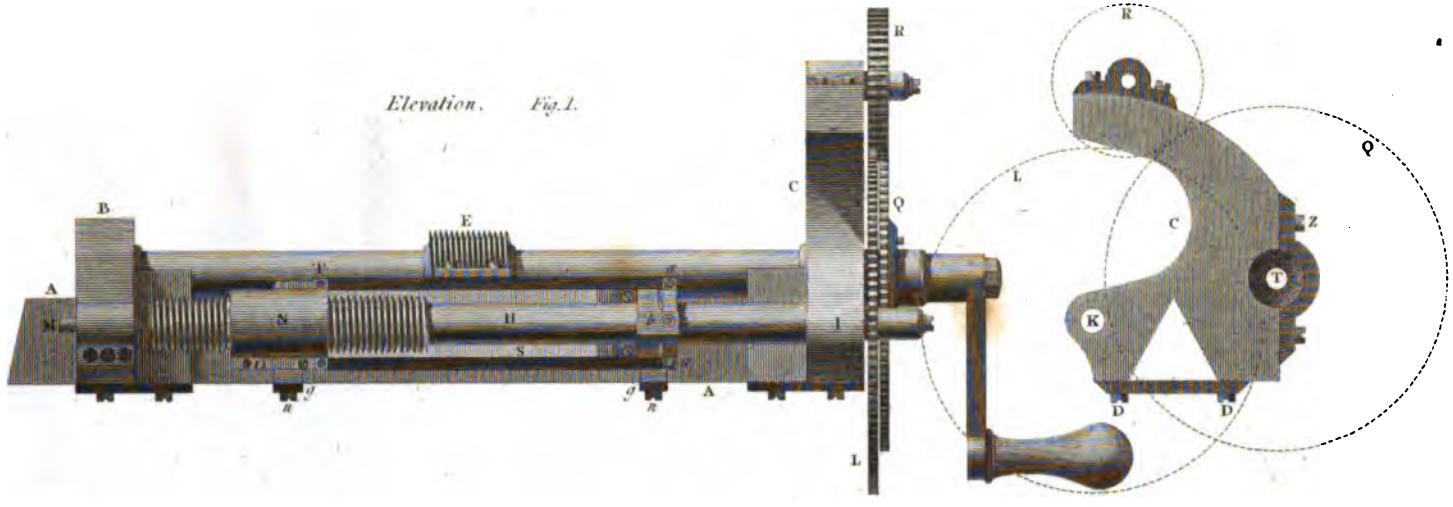
Published as the Act directs, 1809, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

Engine for cutting the Screw of Ramsden's Circular Dividing Engine.



Elevation. *Fig. 1.*



Plan. *Fig. 2.*

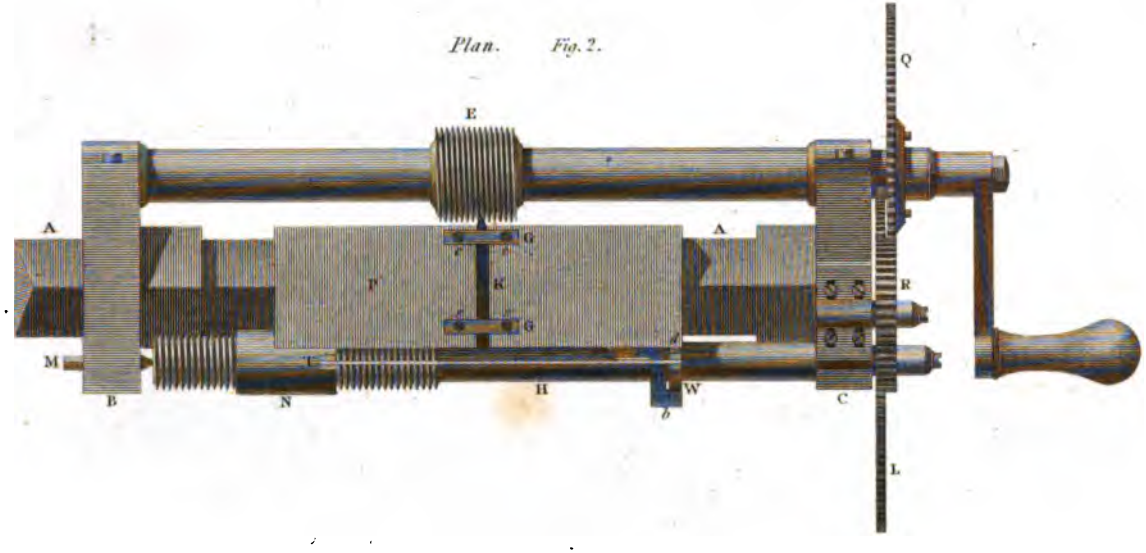
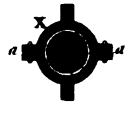


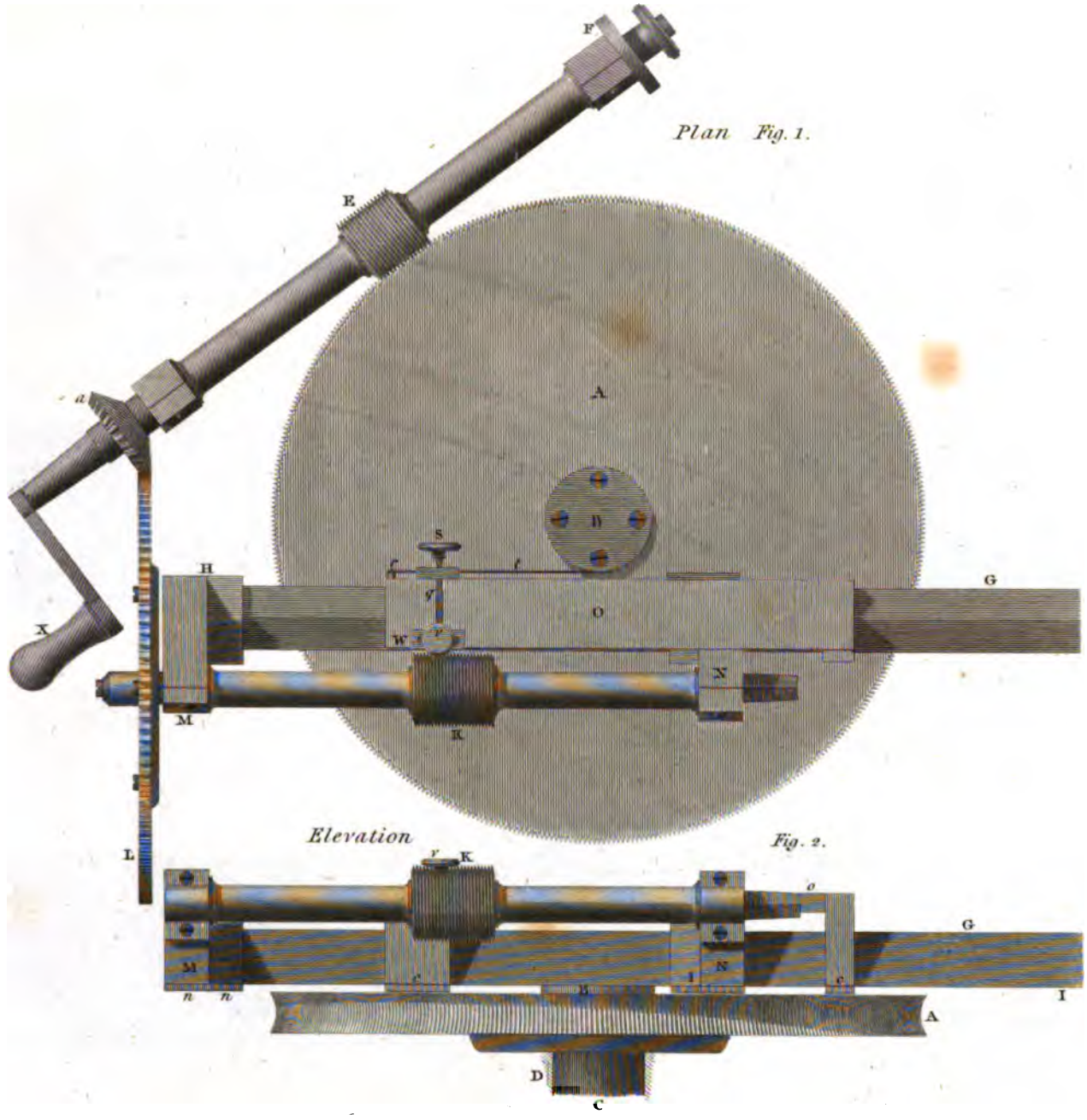
Fig. 3.



Drawn by J. Farey.

Published as the Act directs, 1812, by Longman Hurst Rees, Orme and Brown, Paternoster Row, London.

Engraved by W. Lowry.



Drawn by J. Farey.

Published as the Act directs, 1811, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.

Engraved by Wilson

Ramsden's Engine for dividing straight Lines.

Fig. 3.

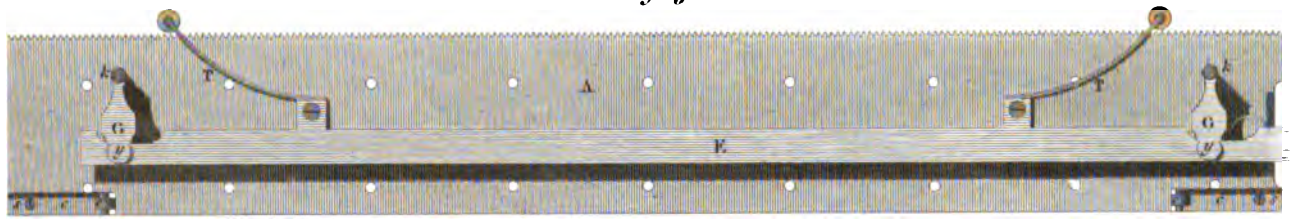


Fig. 1.

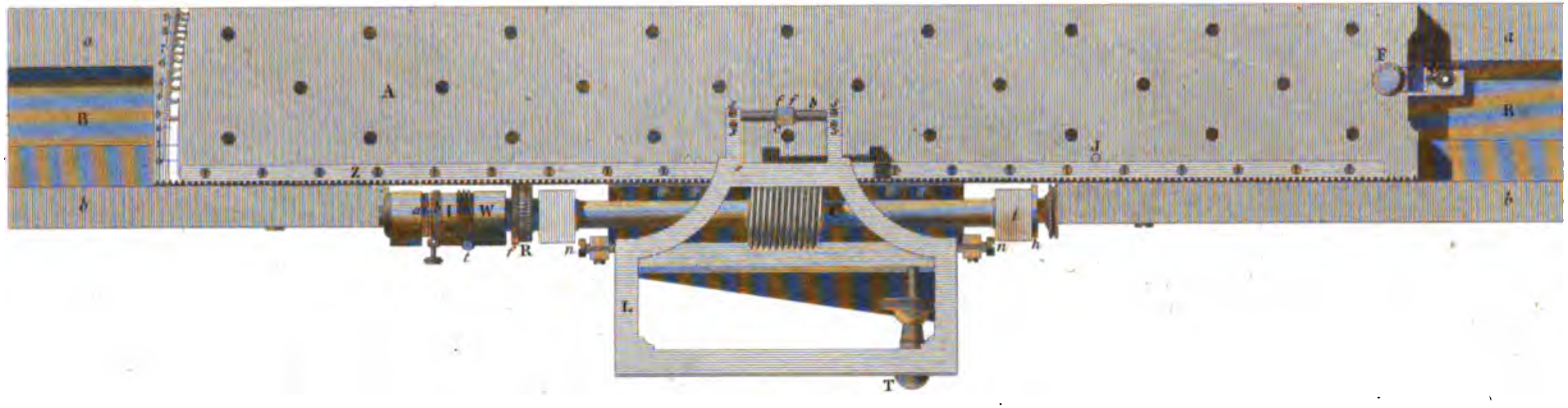
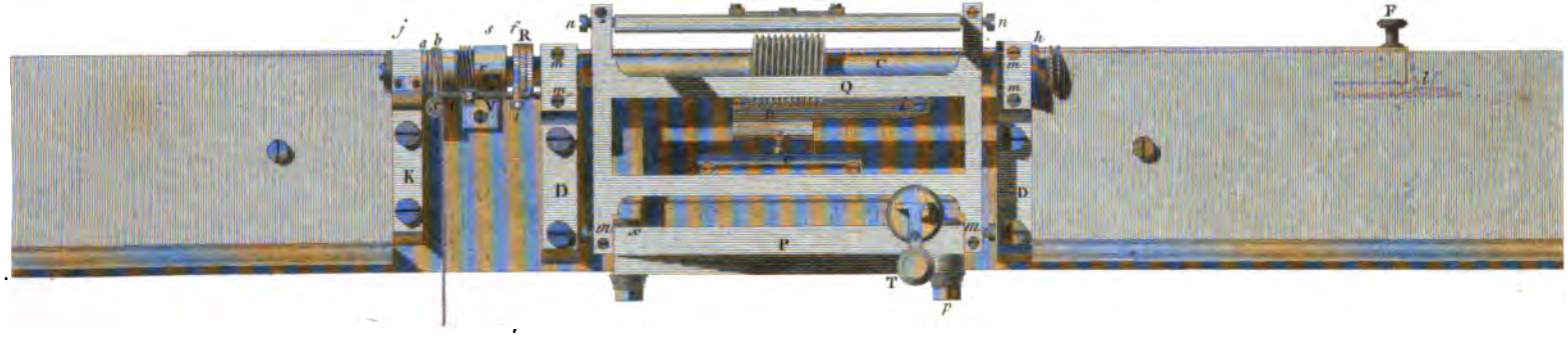


Fig. 2.



J. Farey Jun. del.

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Engraved by Wilson Lowry.

Engraved front of King Alfreds Jewel.
ÆLFRED MEC HEHT GEWYRCAN

Fig. 1.

Engraving on the back of King Alfreds Jewel.

from the Engraved Seal of Anselm the Primate.

hic iacet dominus

Fig. 3.

FARRIERY.

HORSE SHOEING.

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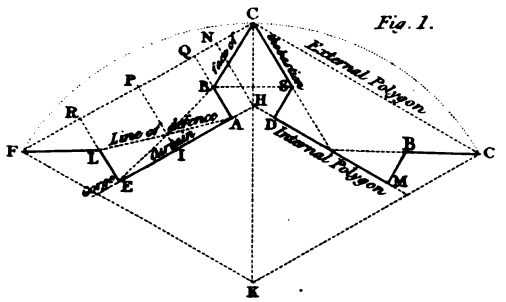
Engraved by Wilson Lowry.

FORTIFICATION.

PLATE I.

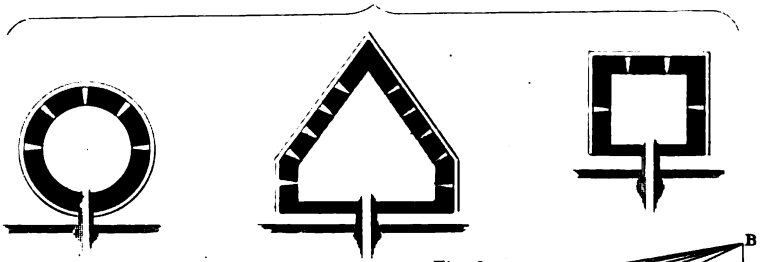
BASTION.

Fig. 1.



CAVALIER.

Fig. 2.



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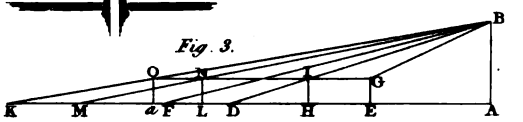


PLATE II.

Fig. 1.

BATTERY.

Battery en Barbe or Barbet.

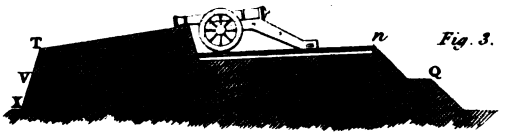


Fig. 3.

Fig. 2.

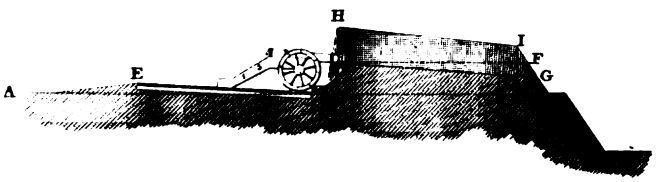


Fig. 8.

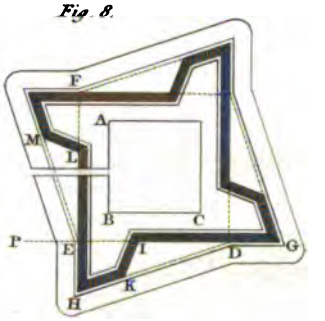


PLATE IV.

Fig. 4.

FORT.

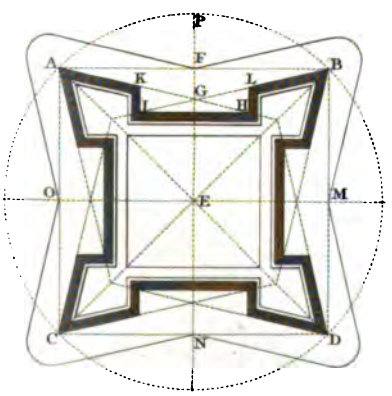
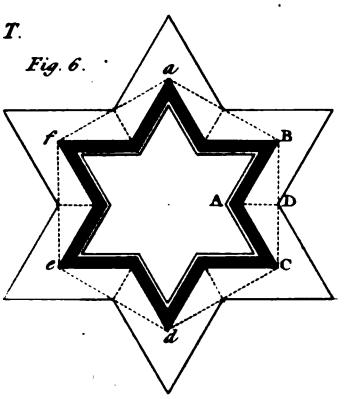


Fig. 6.



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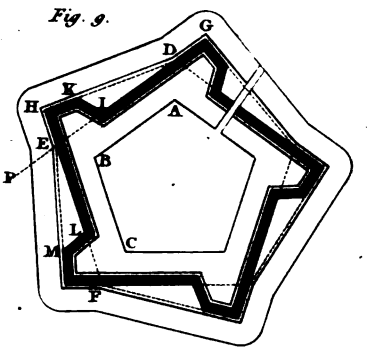

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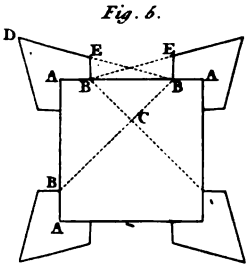

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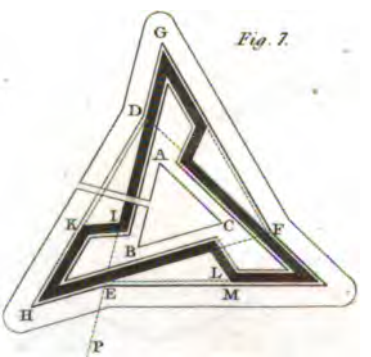

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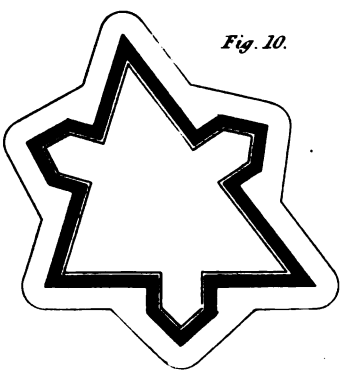

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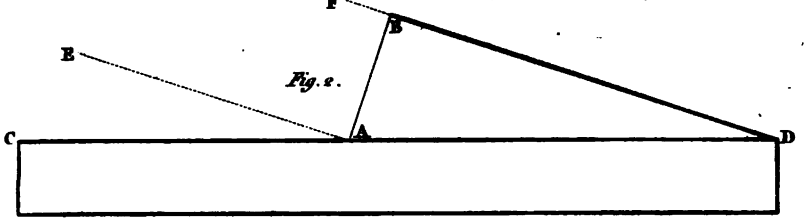
Lowry, Sc.

Fig. 1.

EÇHELLON.



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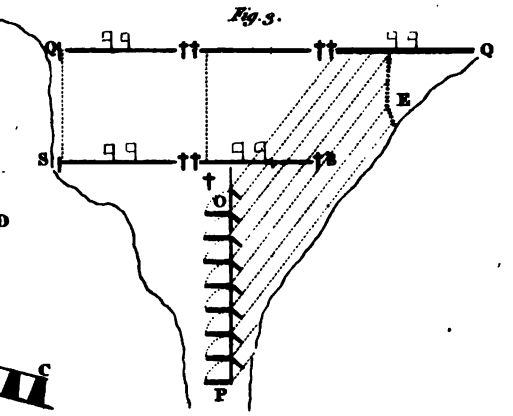


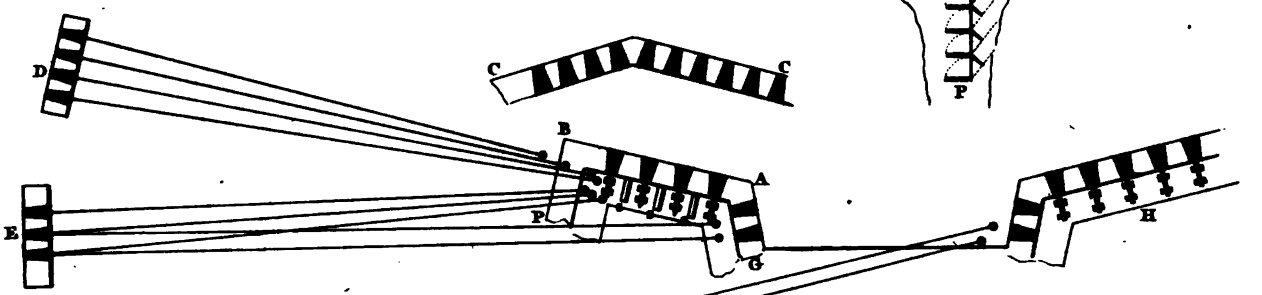
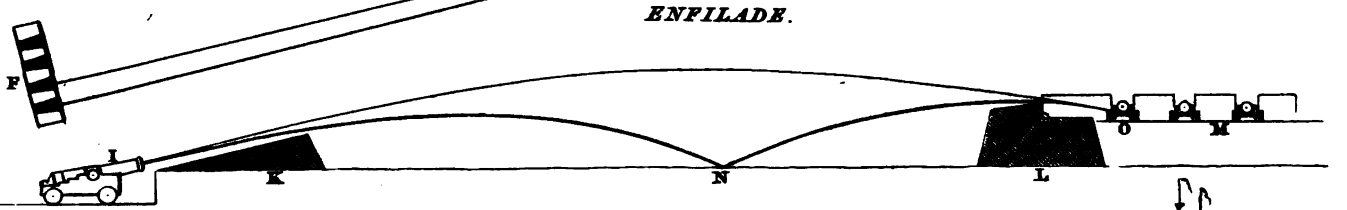
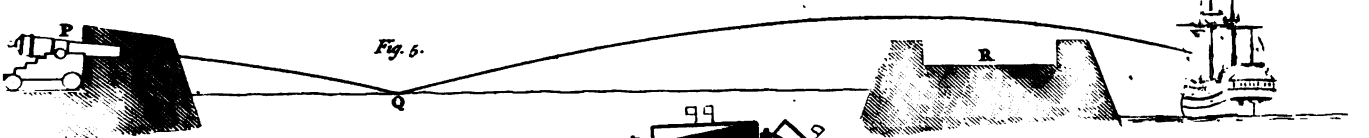
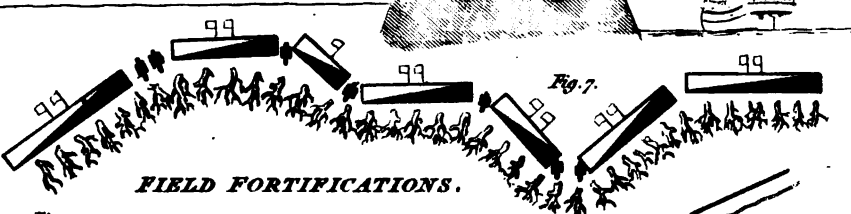


Fig. 4.

ENFILADE.







FIELD FORTIFICATIONS.

Fig. 9.

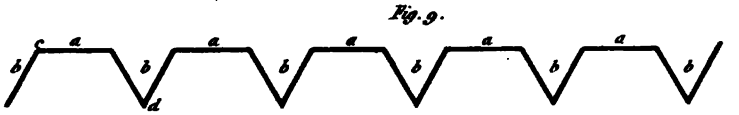


Fig. 8.

Fig. 10.

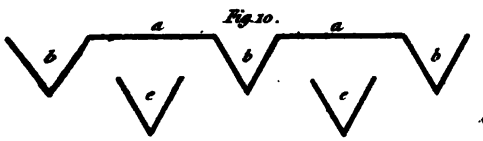


Fig. 11.

Fig. 13.

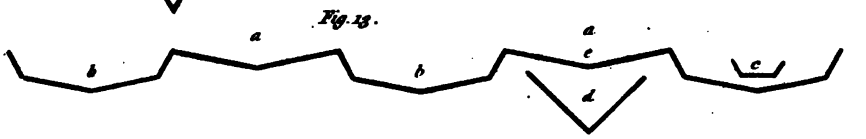
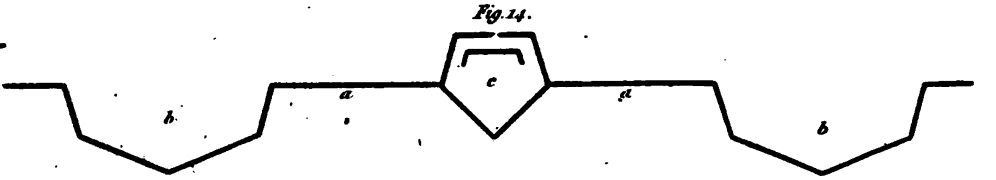


Fig. 12.

Fig. 14.



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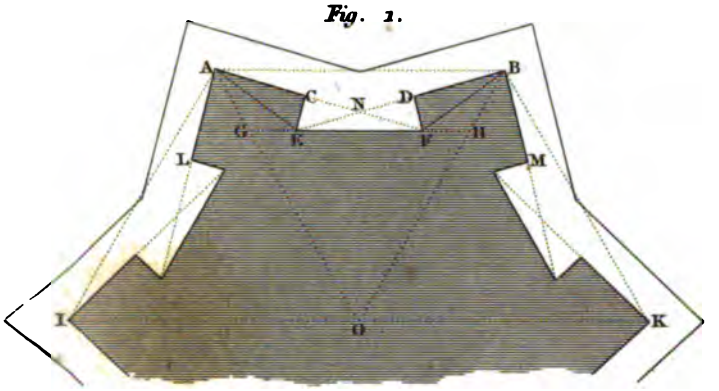
FORTIFICATION.

CONSTRUCTION.

Fig. 1.



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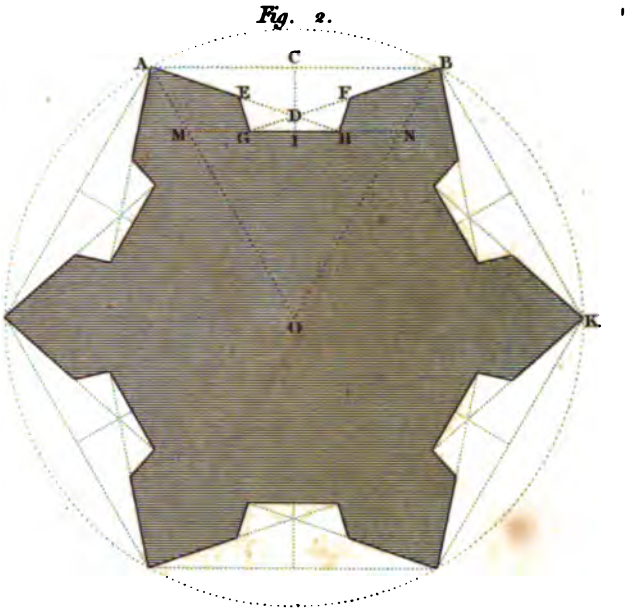

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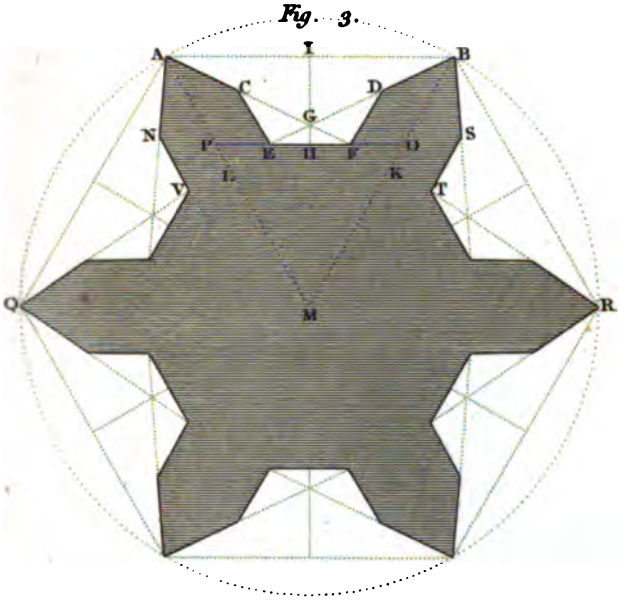

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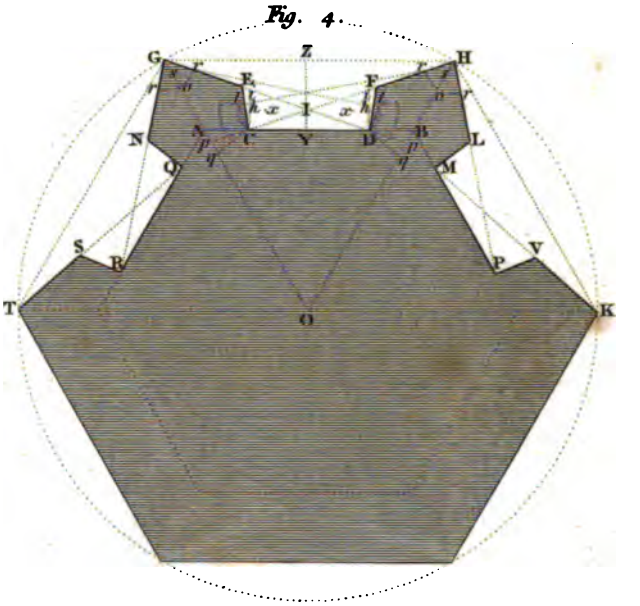

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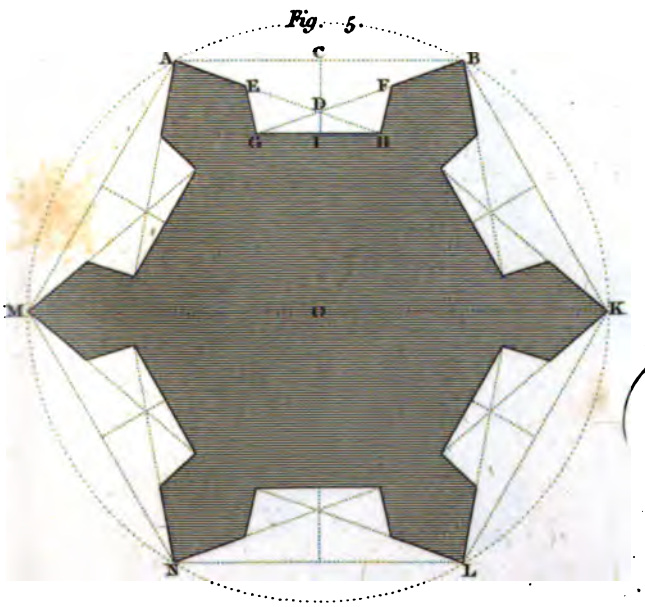

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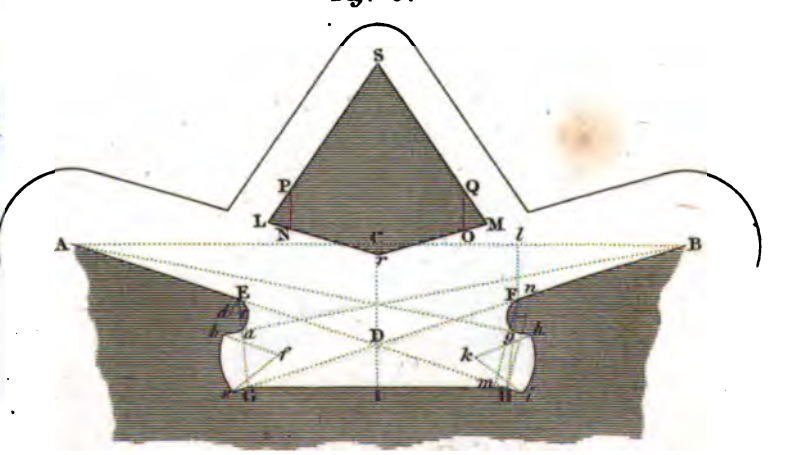

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CONSTRUCTION.

Fig. 7.

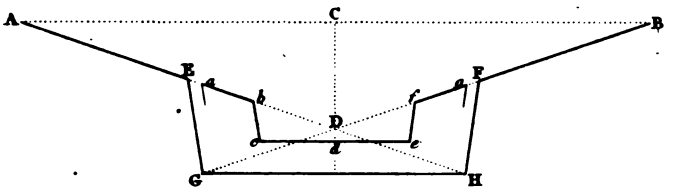


Fig. 8.

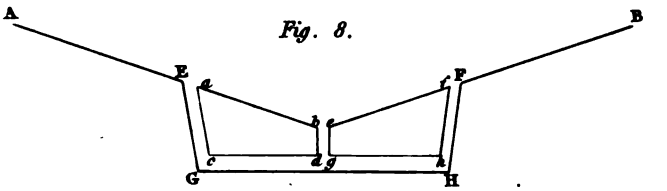


Fig. 9.

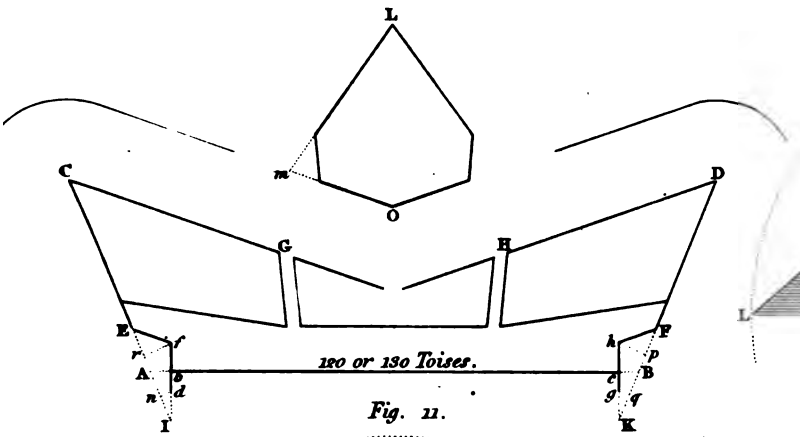
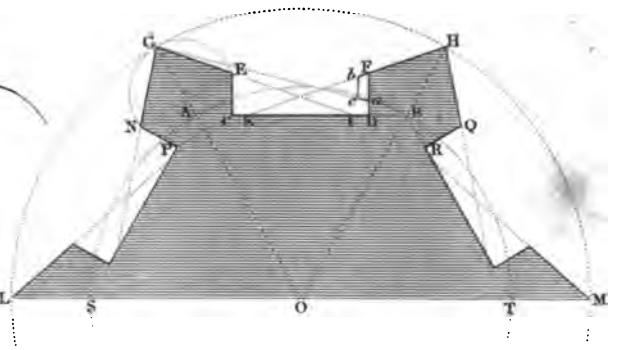


Fig. 10.



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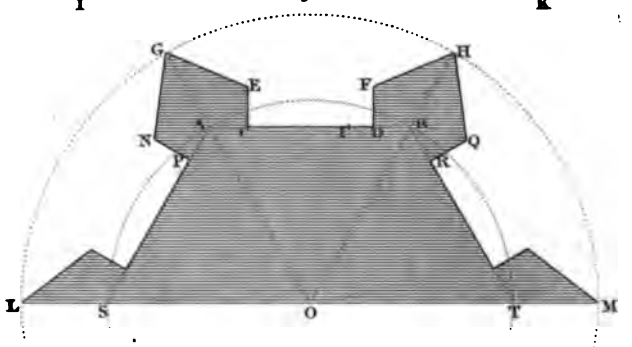
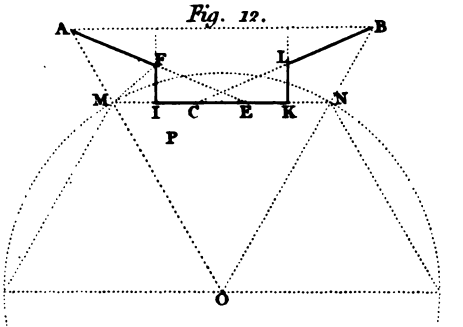


Fig. 12.



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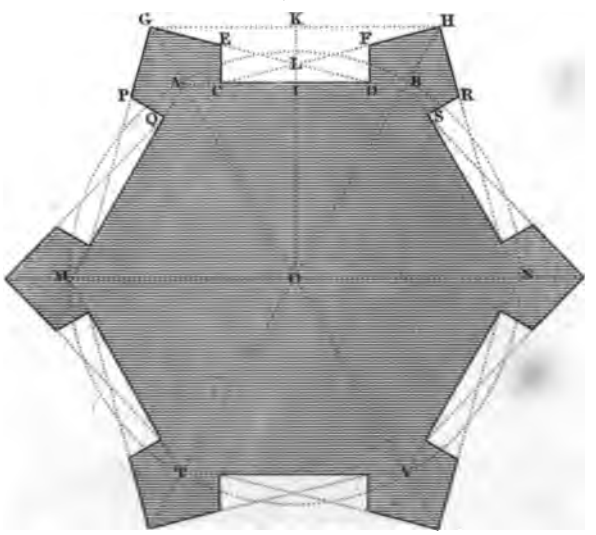

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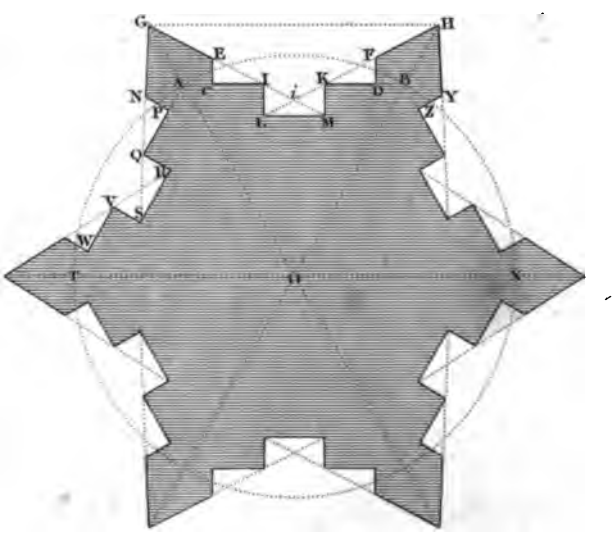


Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row. *Engraved by Wilson Lowry.*

Fig. 1.
FORTIFICATION
Irregular

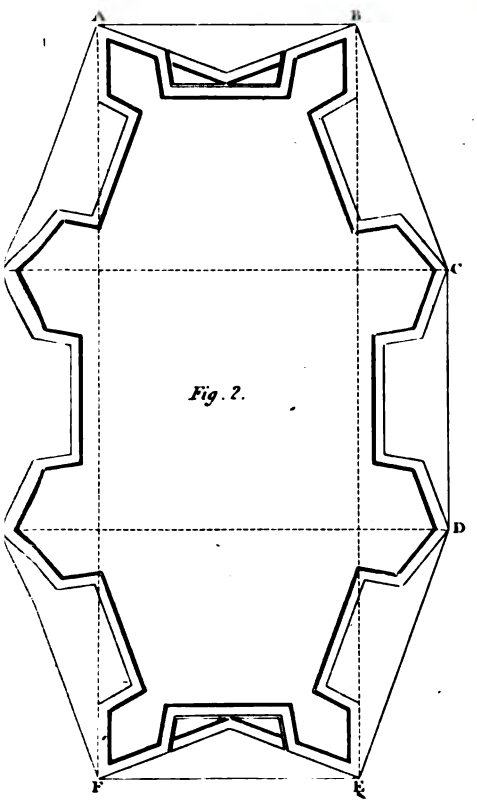
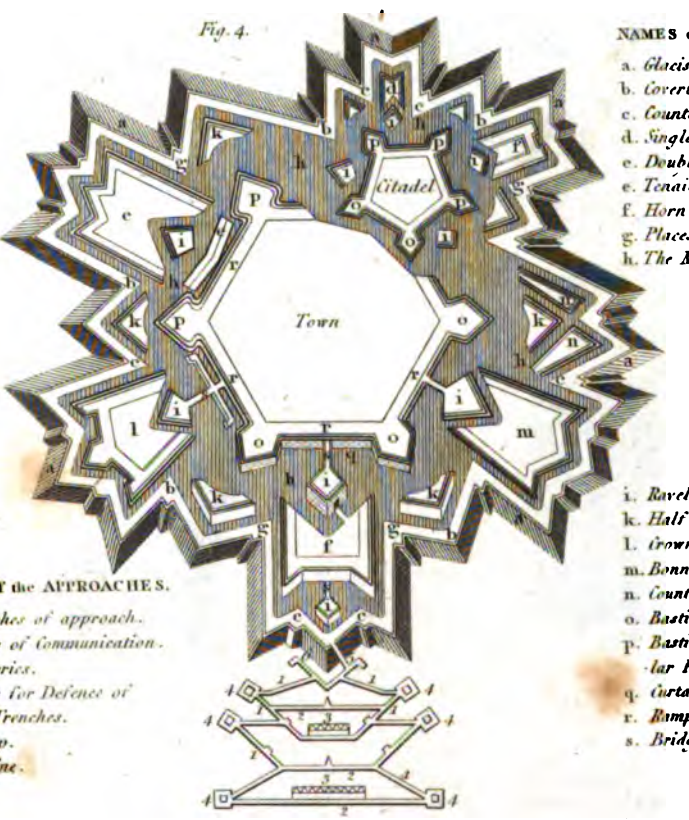


Fig. 2.

FORTIFIED PLACE

Fig. 4.



NAMES of the WORKS.

a. *Glacis or Declivity.*
b. *Covert-way.*
c. *Counterscarp.*
d. *Single* Tenaille.
e. *Double* Tenaille.
e. *Tenaille in the Ditch.*
f. *Horn Work.*
g. *Places of Arms.*
h. *The Moat or Ditch.*
i. *Ravelins.*
k. *Half Moons.*
l. *Crown Work.*
m. *Bonnet or Priests Cap.*
n. *Counter Guard.*
o. *Bastions.*
p. *Bastions with Circular Flanks.*
q. *Curtain.*
r. *Rampart or Wall.*
s. *Bridges.*

NAMES of the APPROACHES.

1. *Trenches of approach.*
2. *Lines of Communication.*
3. *Batteries.*
4. *Forts for Defence of the Trenches.*
5. *a Sap.*
6. *a Mine.*

PROFILE of a FORTIFICATION.

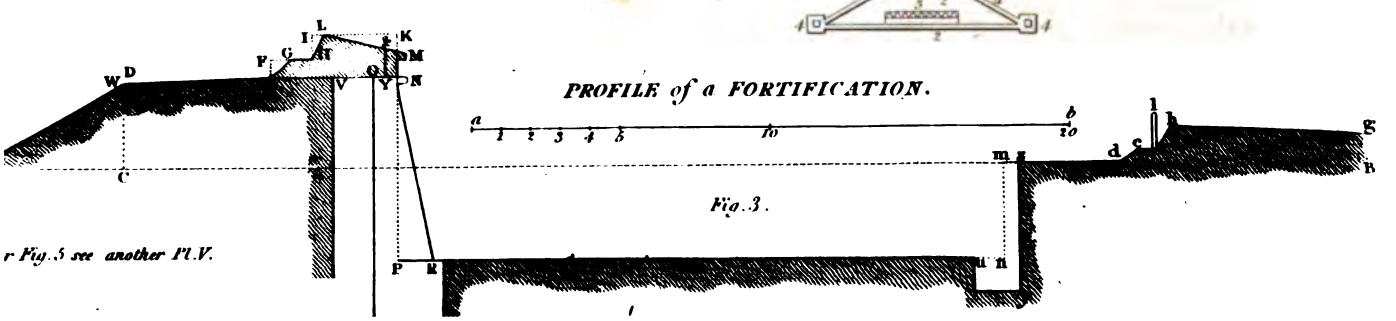
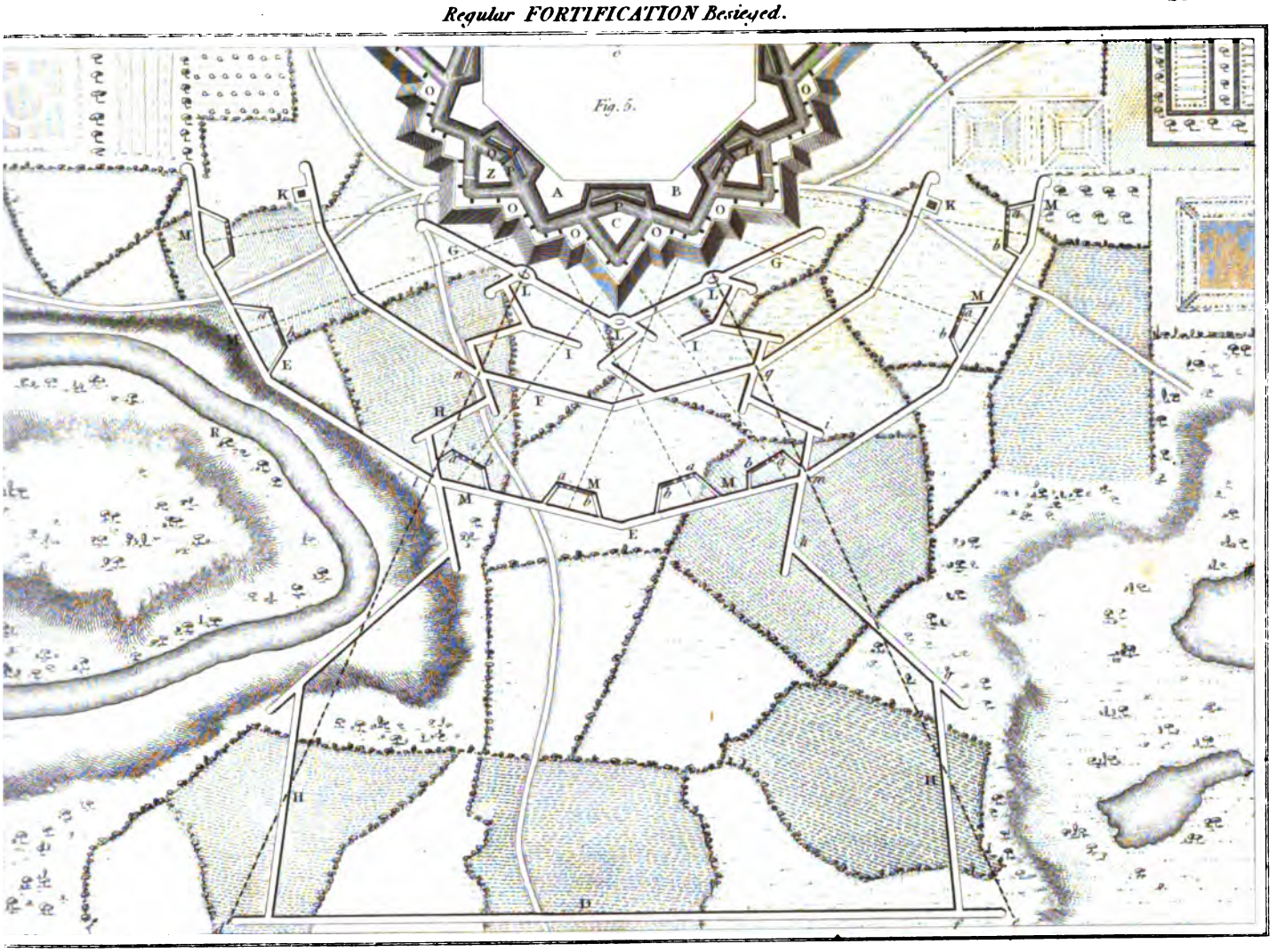


Fig. 3.

r Fig. 5 see another Pl. V.

FORTIFICATION.

Regular FORTIFICATION Besieged.



GALLERY.

Fig. 7.

GABION.

Fig. 8.

A. B. *Bastions.*
C. *Ravelin.*
D. *Line of Communication of the Attacks.*
E. *First Parallel.*
F. *Second D°*
G. *Third D°*
H. *The Approaches.*
I. *Places of Arms.*
K. *Square Redoubts to prevent Sallies.*
L. *Traverses in the third Parallel.*
M. *Batteries (a Cannon b Mortars)*
N. *Glacis.*
O. *Places of Arms in the covert way.*
P. *The Ditch.*
Q. *Bridge of Communication.*
R. *A River.*
S. *Rising Ground.*

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Lowry sc.

FORTIFICATION.

Horn-work.

Fig. 1.

Double Horn-work or Crown-work.

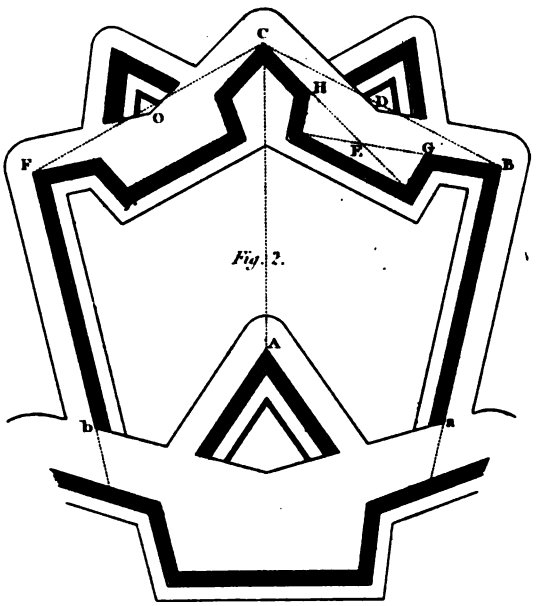


Fig. 2.

LINE.

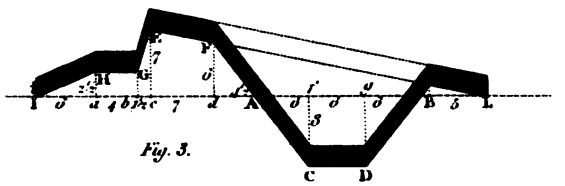


Fig. 3.

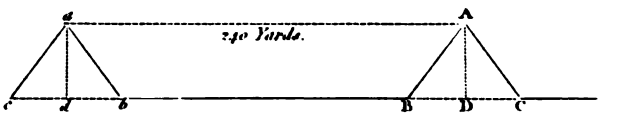


Fig. 4.

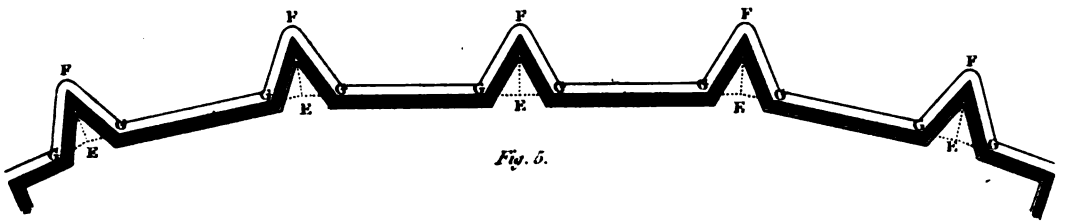
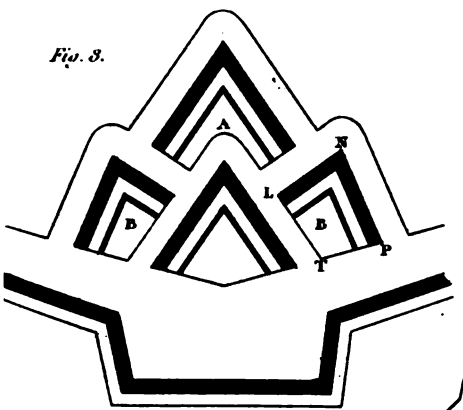


Fig. 5.

Lunette.

For Fig. 7. see. Plate V. Fig. 4.

Fig. 8.



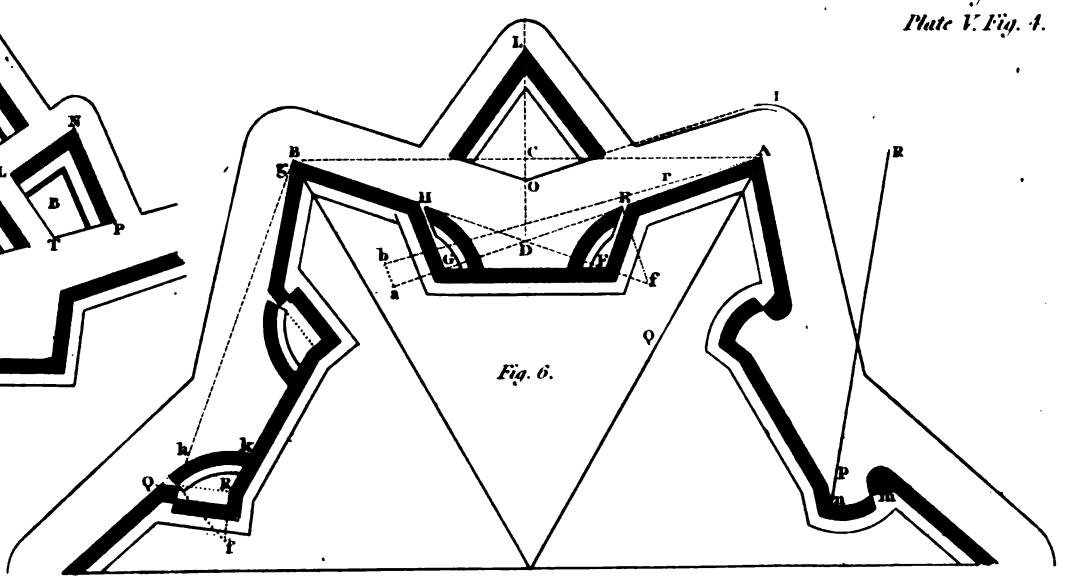


Fig. 6.

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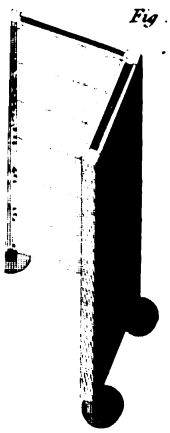
FORTIFICATION.

PLATES VI. VII & VIII.

MANTELET

Fig. 9.



MINE

Fig. 10.

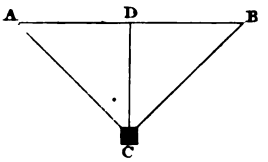
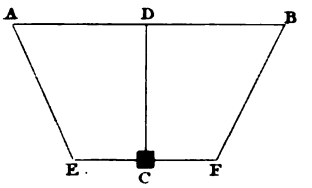


Fig. 11.



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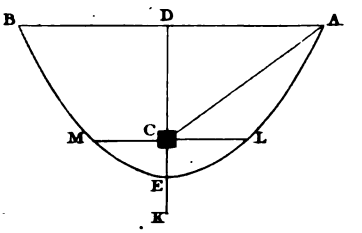


Fig. 13.

Fig. 14.

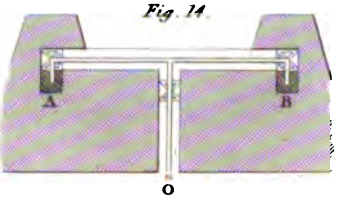
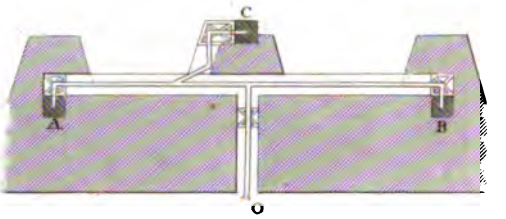
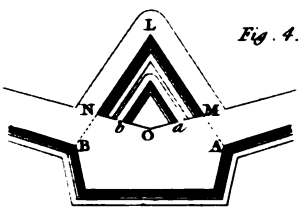


Fig. 15.



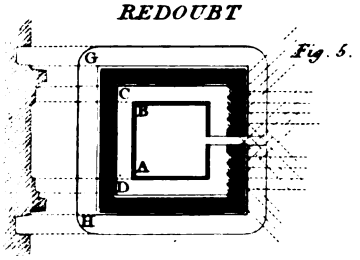
RAVELIN

Fig. 4.



REDOUBT

Fig. 5.



TENAILLE

Fig. 7.

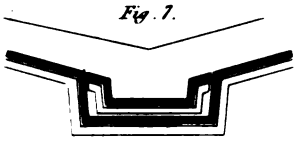


Fig. 6.

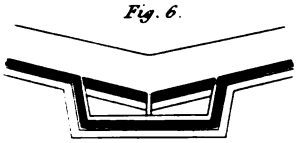
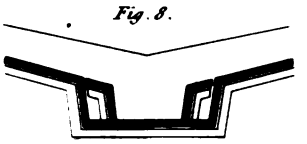


Fig. 8.



TENAILLON

Fig. 9.

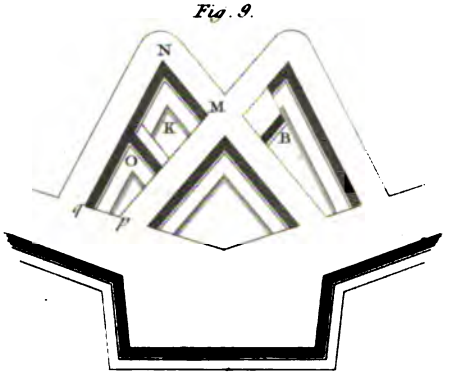


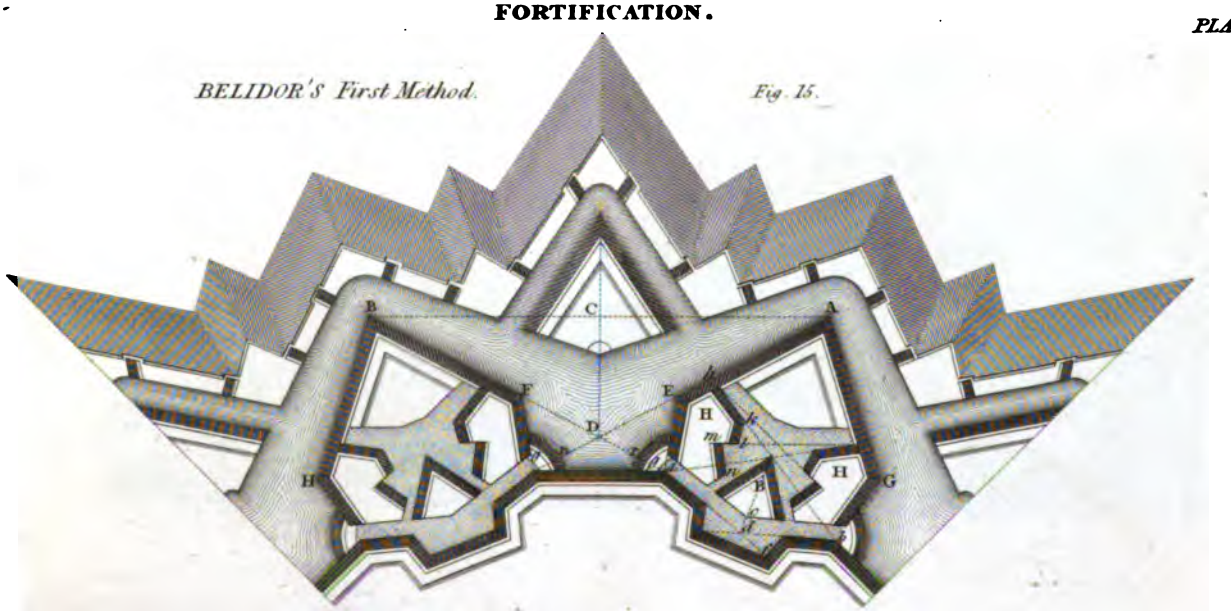
PLATE VII.

FORTIFICATION.

PLATE VIII.

BELIDOR's First Method.

Fig. 15.



Published as the Act directs, 1819, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.

Lowry sc.

Fig. 1.

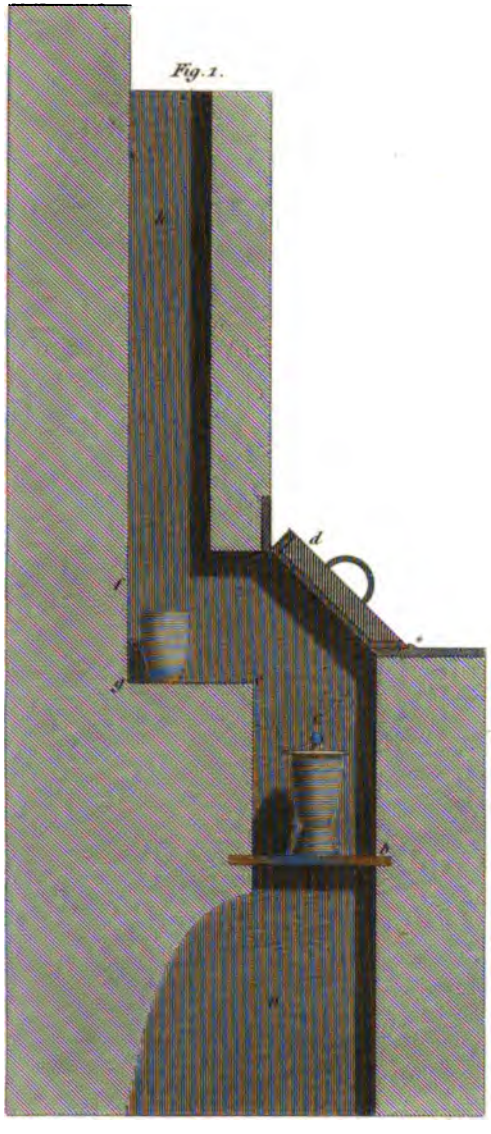


Fig. 3.

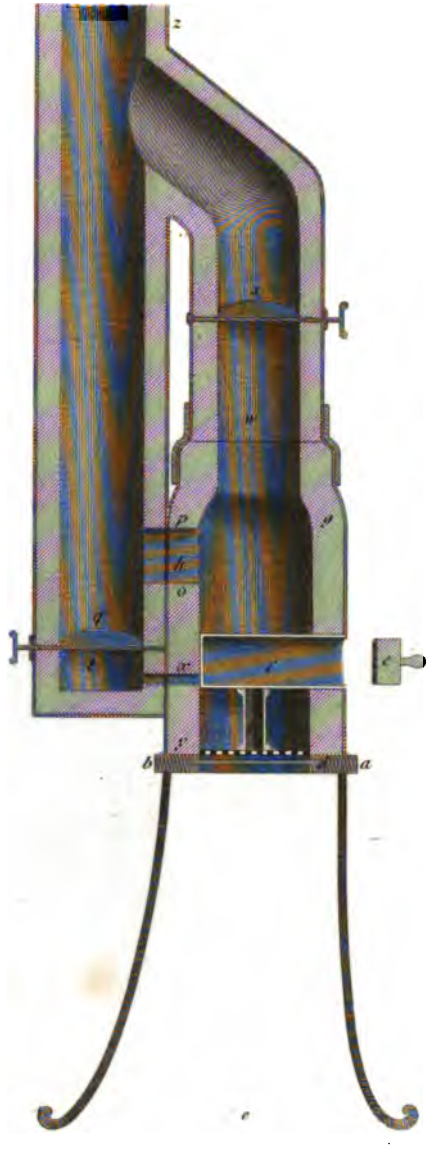
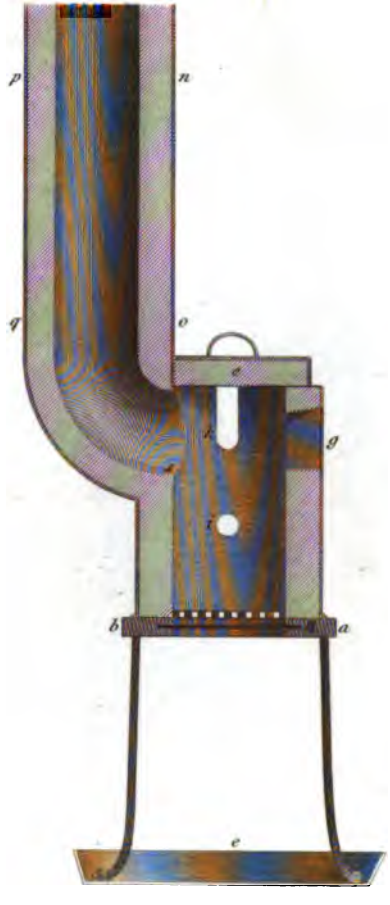


Fig. 2.



Scale of Feet.

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FURNACES.

Common Air Furnace.

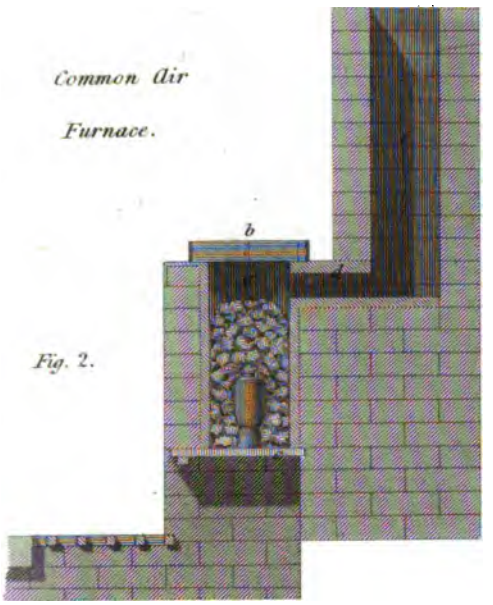


Fig. 2.

Dr. Black's.

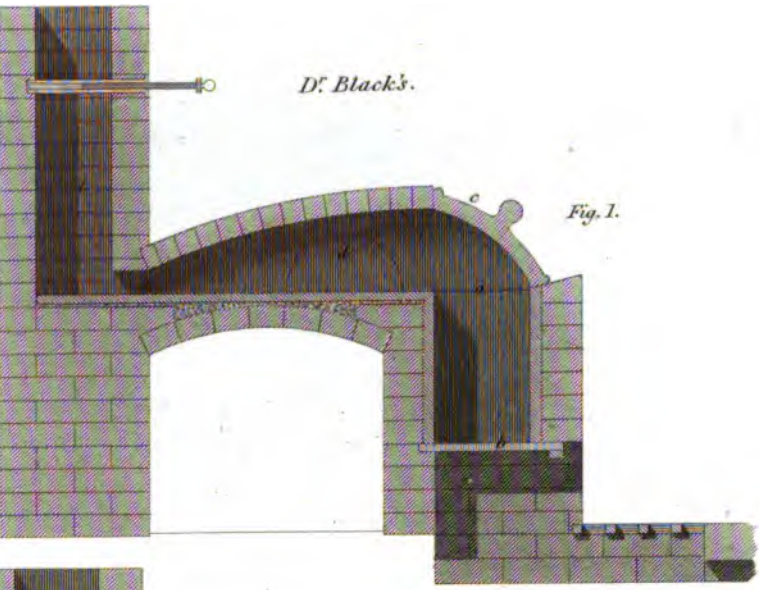


Fig. 1.

Mr. Mushets.

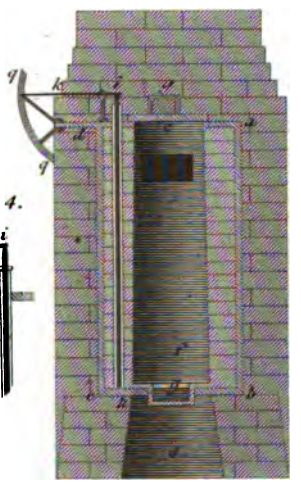
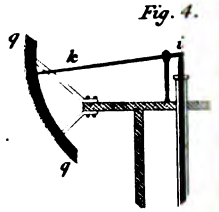


Fig. 4.



Mr. Knights.

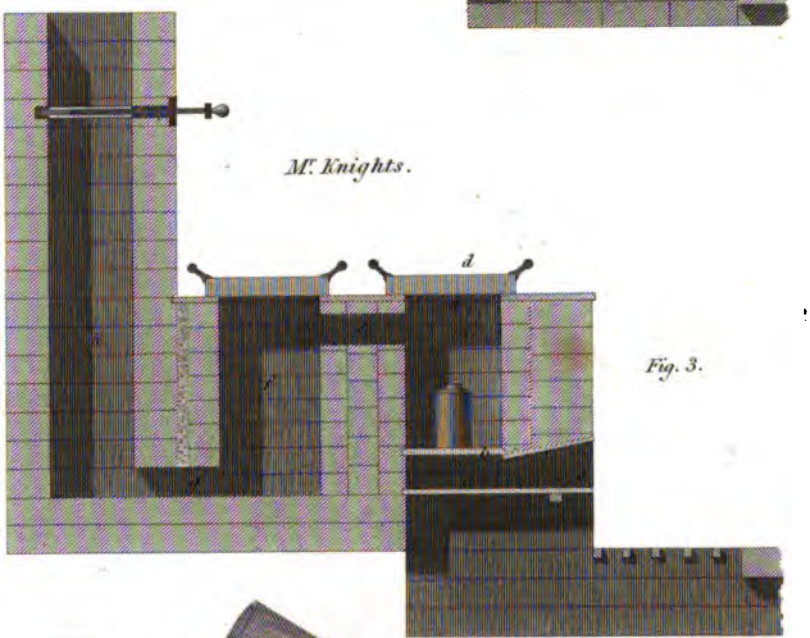


Fig. 3.

Portable by Dr. Black.

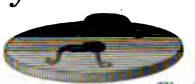


Fig. 11.

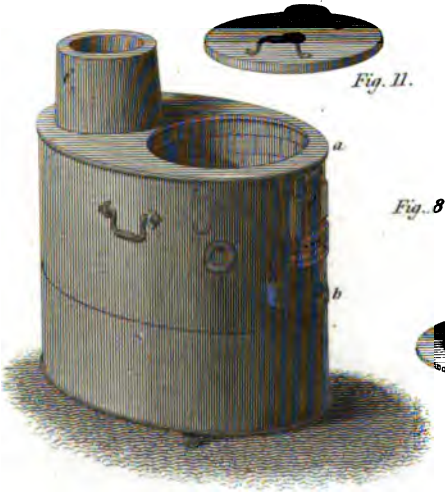


Fig. 6.

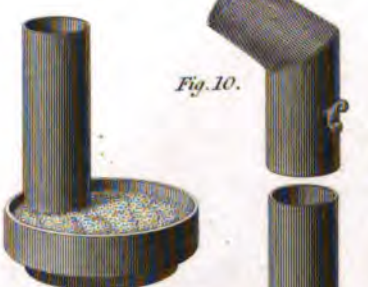


Fig. 8.

Fig. 10.

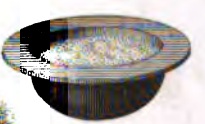


Fig. 7.

Fig. 9.

Knights Portable.

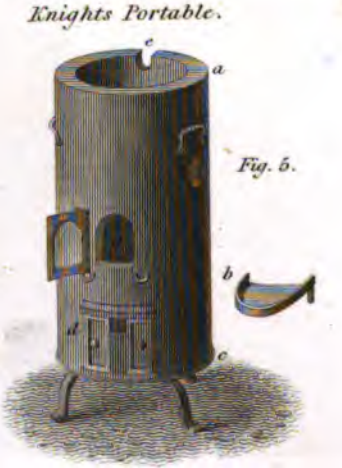


Fig. 5.

by J. Farey Jun.

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Engraved by W. Lowry.

FURNACES.

Furnaces used by Mr. Mushet for his experiments on Iron & Steel.

Fig. 2.

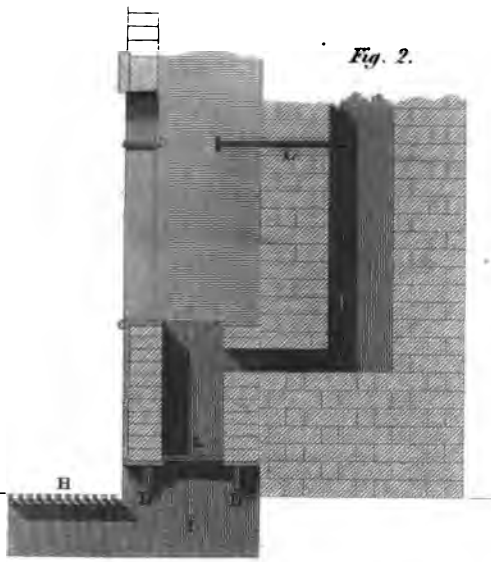


Fig. 1.

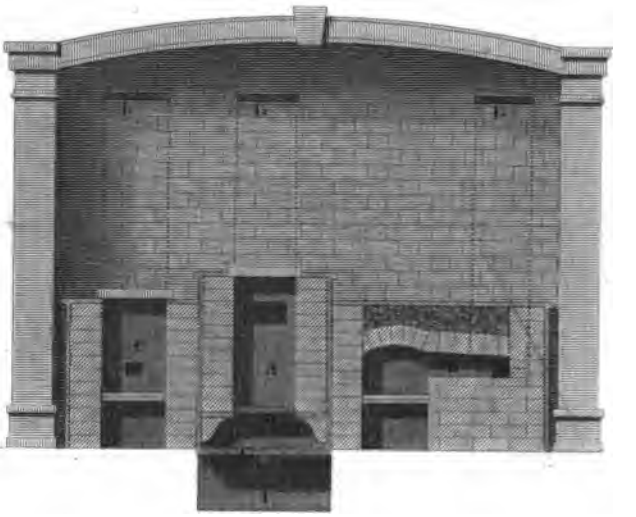
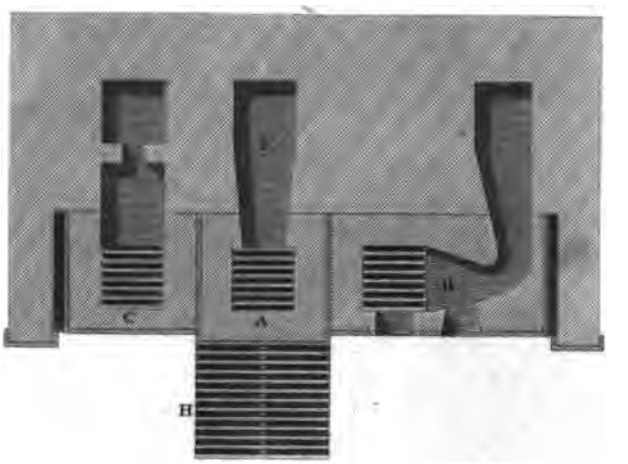
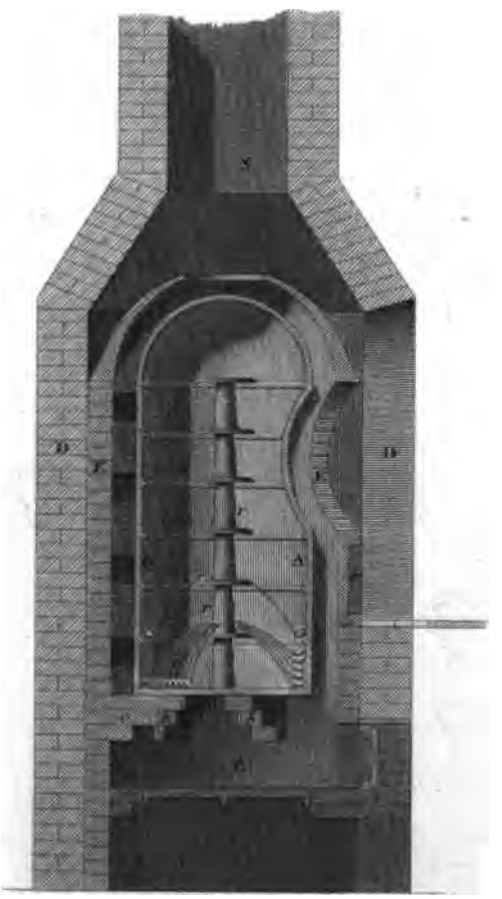


Fig. 3.

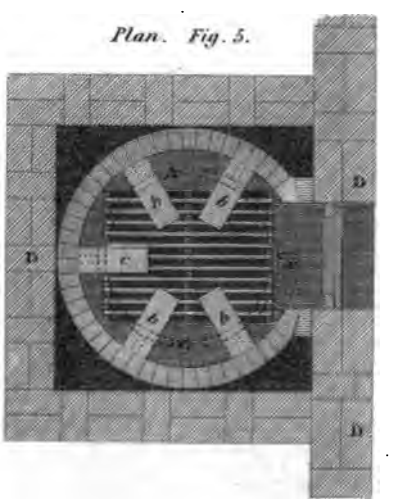


Section of the Tobacco pipe makers Furnace.

Fig. 4.



Plan. Fig. 5.



Jun.r del. Published as the Act directs, 1816, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Lowry Sc.

FURNACE.

Furnace for Enamelling Watch Dial Plates.

Fig. 2.

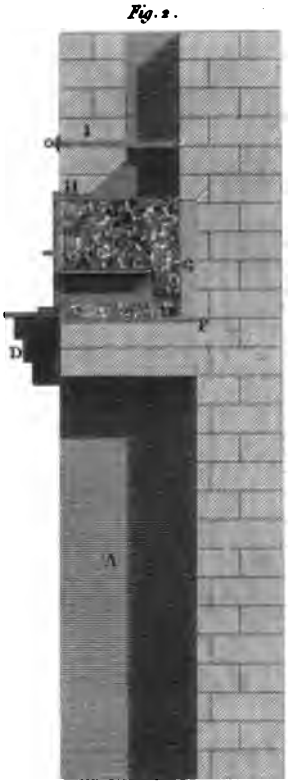


Fig. 1.

2 feet

Fig. 3.

Fig. 4.

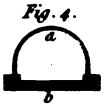


Fig. 5.

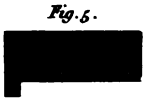


Fig. 6.

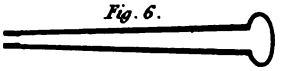


Fig. 7.

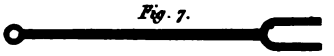


Fig. 8.

Fig. 9.

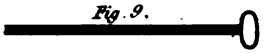


Fig. 11.

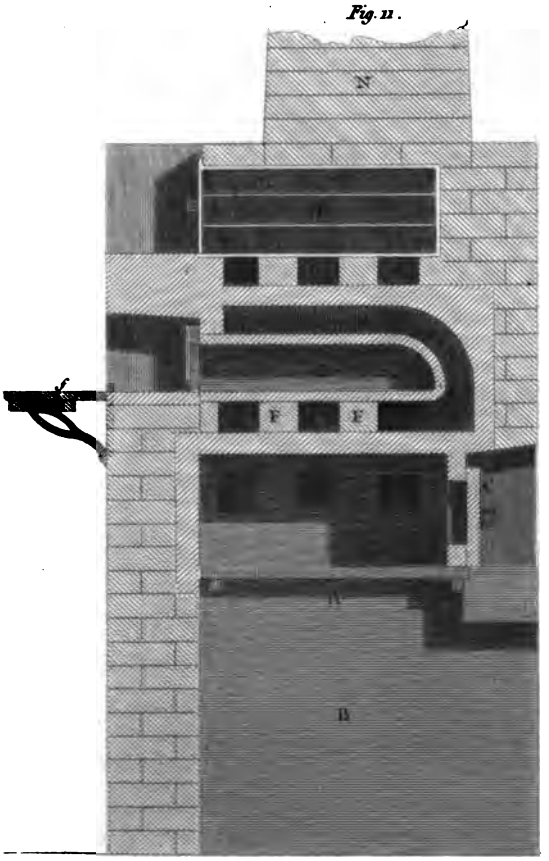
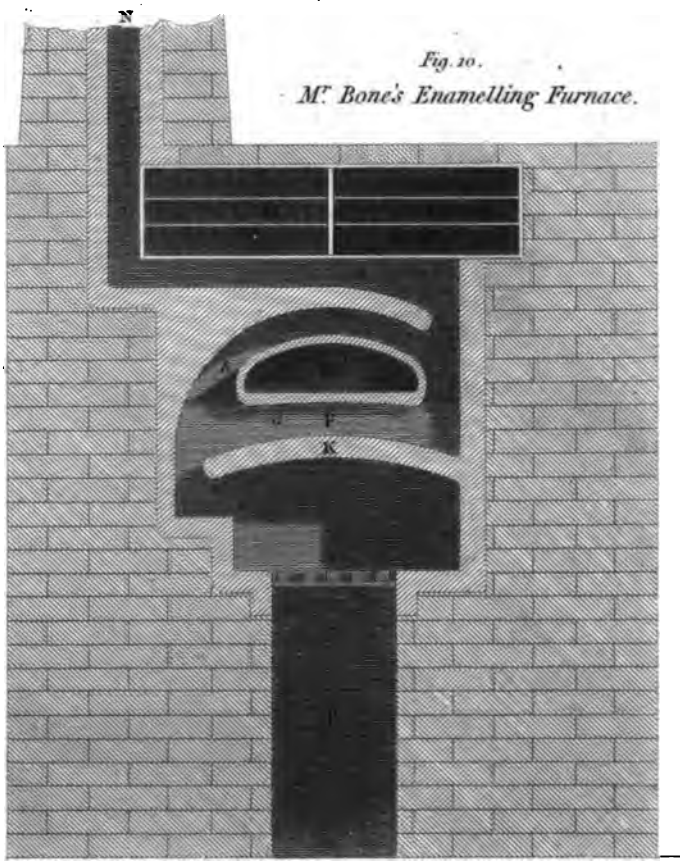
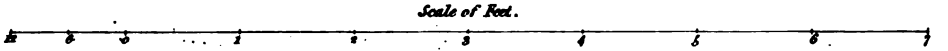


Fig. 10.

Mr. Bone's Enamelling Furnace.



Scale of Feet.



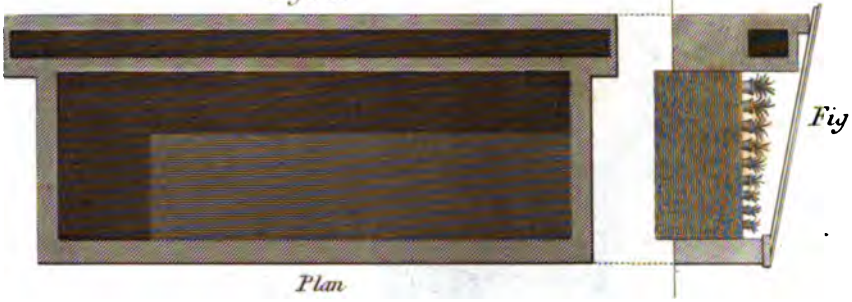
71 by J. Farey. Published as the Act directs, 1811, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Engraved by Wilson Lowry.

BARK-BEDS & PITS.

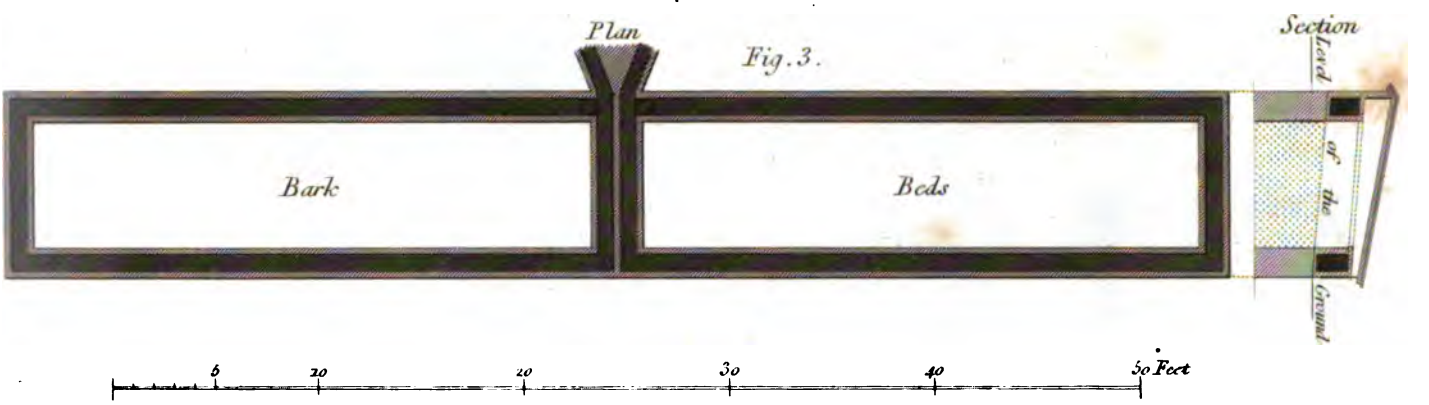
Bark Pit for succession pine apple plants, & other tender Exotics.

Fig. 1.

Fig. 2.



Scale of Feet for Figs. 1. 2. 6.



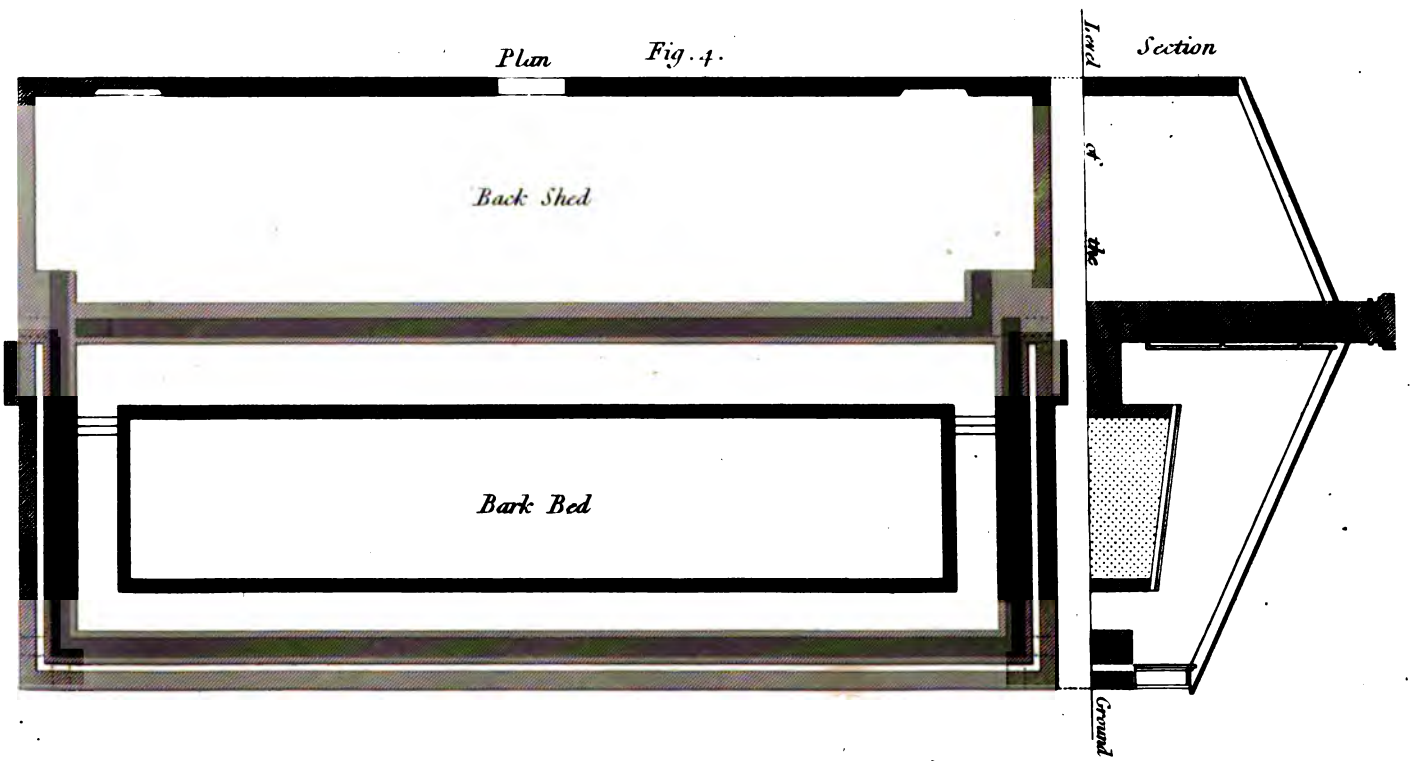


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Fig. 6.

Fig. 4.

Fig. 5.

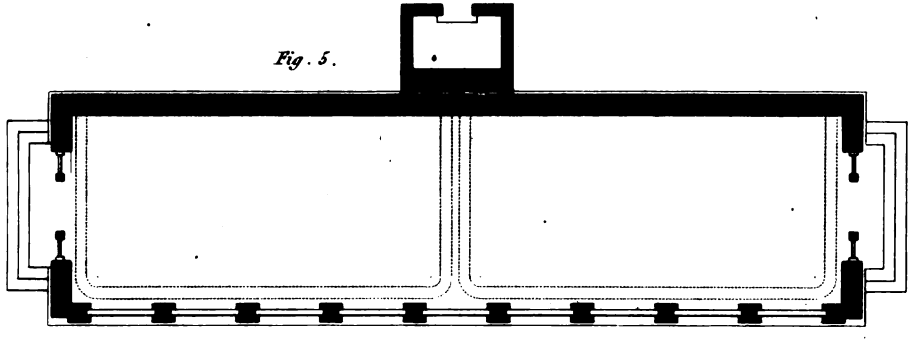


Fig. 1.

Fig. 3.

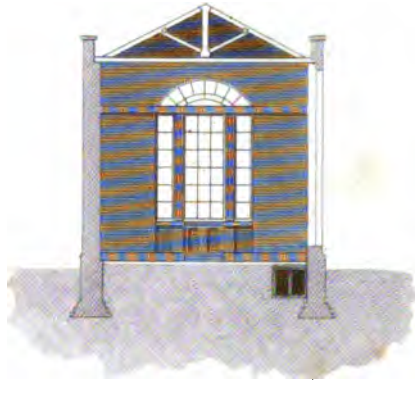
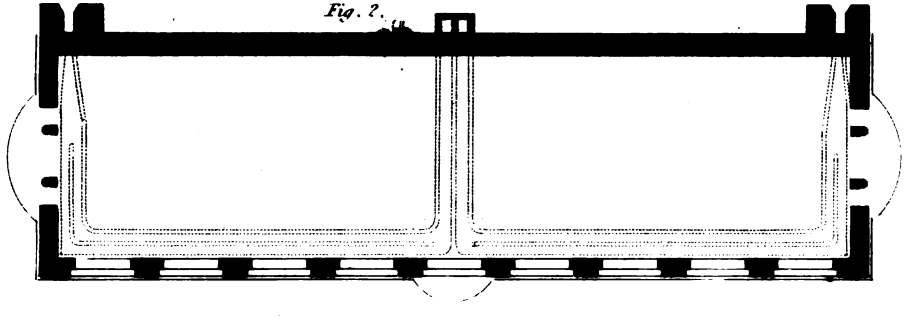


Fig. 2.



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Lowry Sc.

GARDENING.

HOT - HOUSE.

Fig. 1. Elevation.

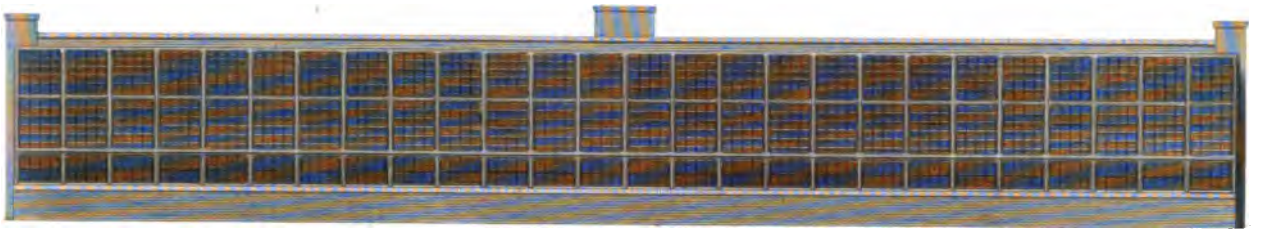


Fig. 2. Plan

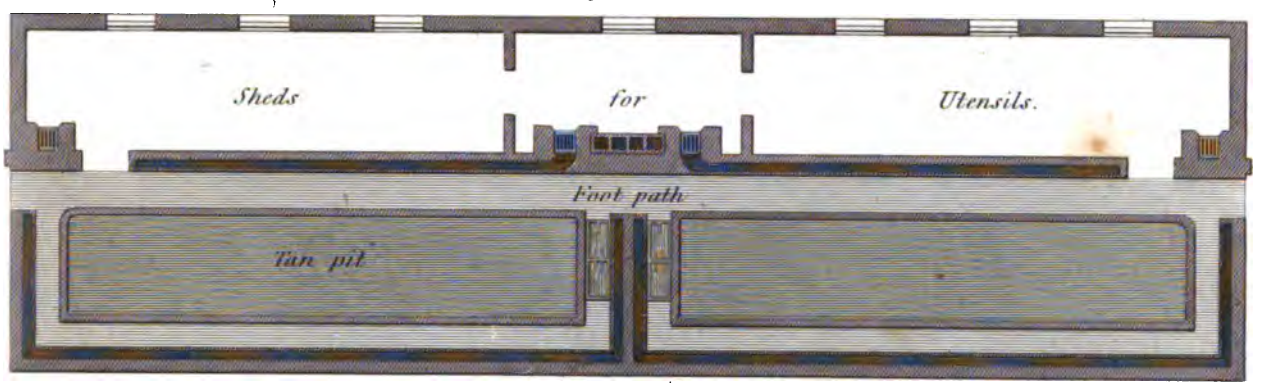


Fig. 4.

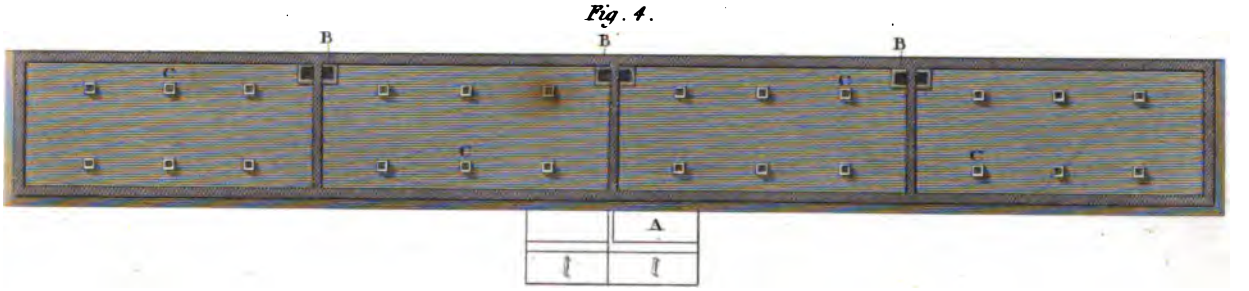


Fig. 5.

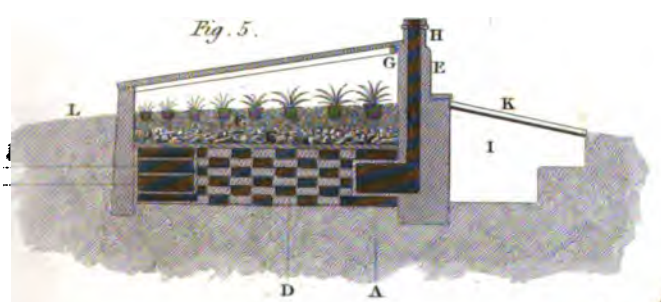
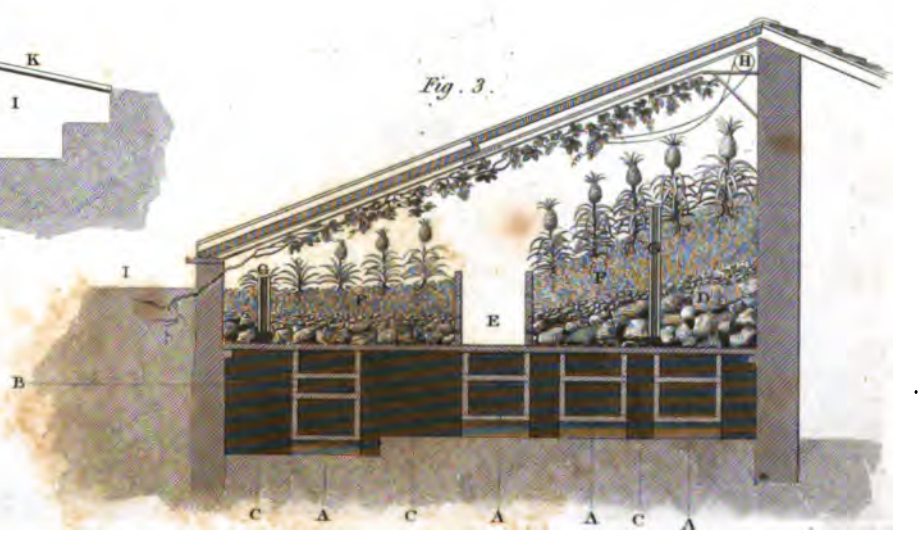


Fig. 3.



GARDENING.

HOT - HOUSE.

Fig. 1. Elevation.

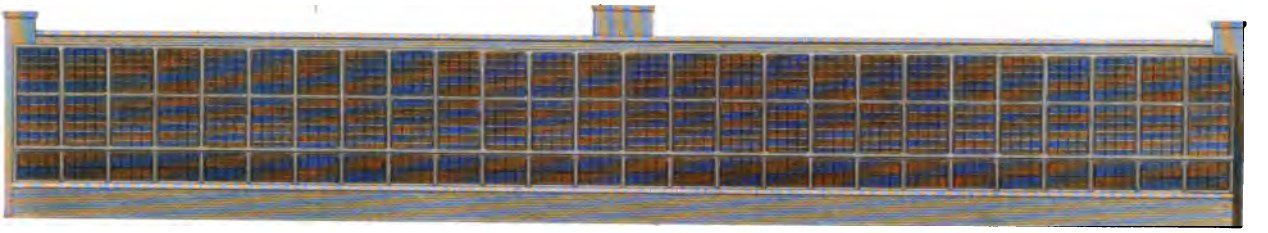


Fig. 2. Plan

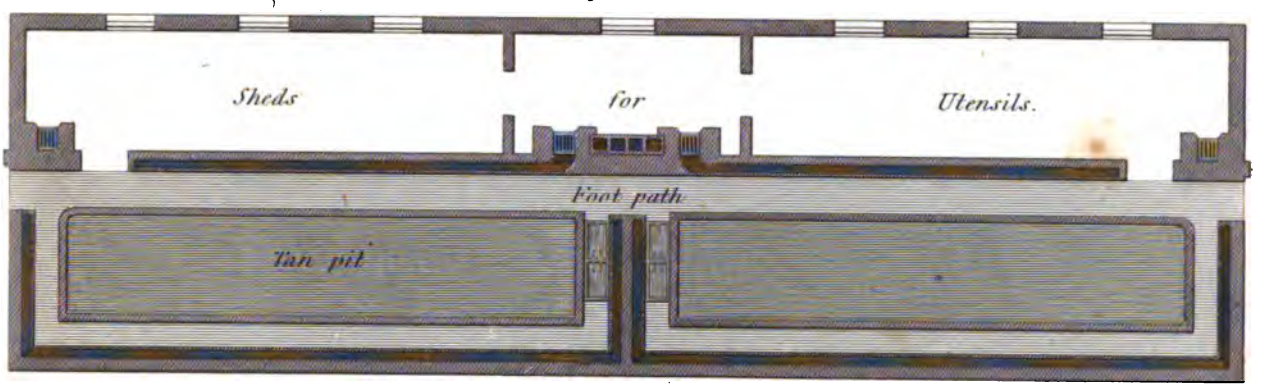


Fig. 4.

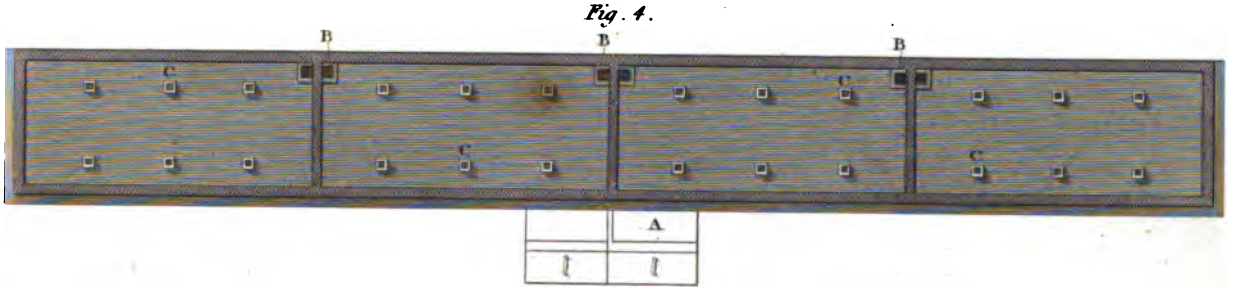


Fig. 5.

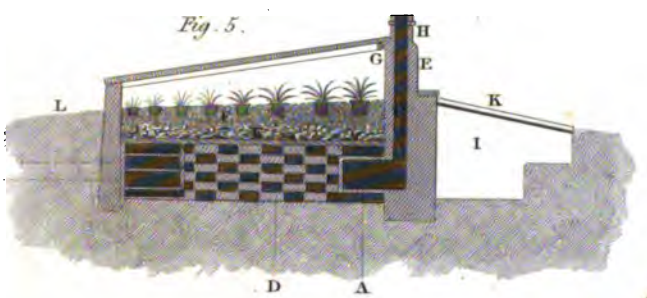
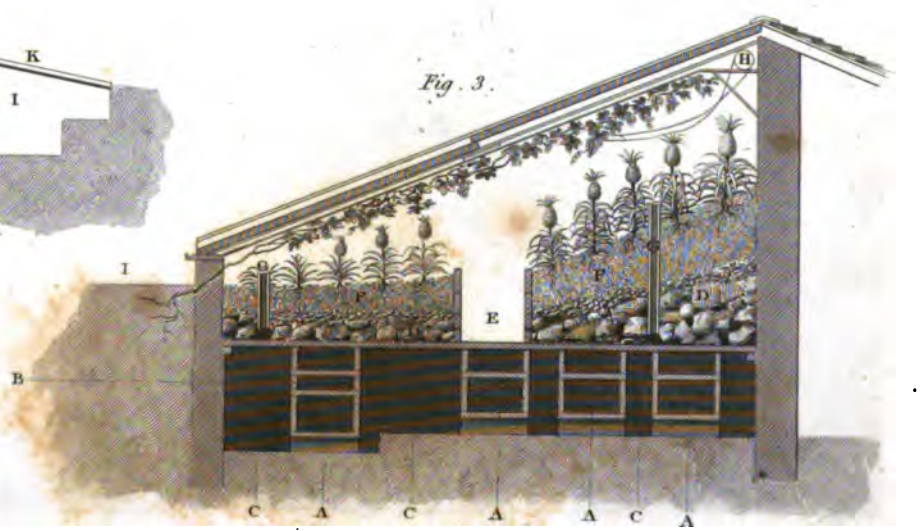


Fig. 3.



GEOGRAPHY

Fig. 1.

DISTANCE

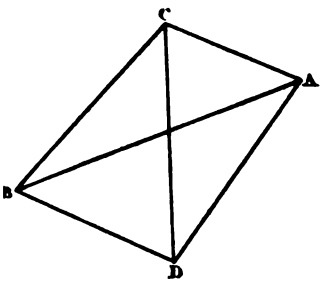


Fig. 2.

HORIZON

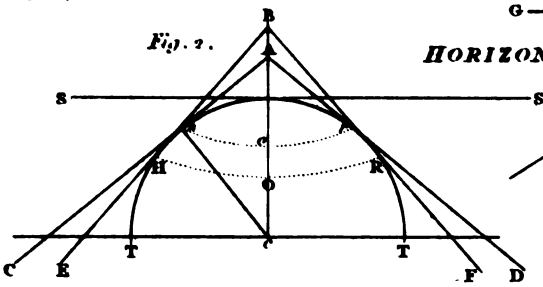


Fig. 3.

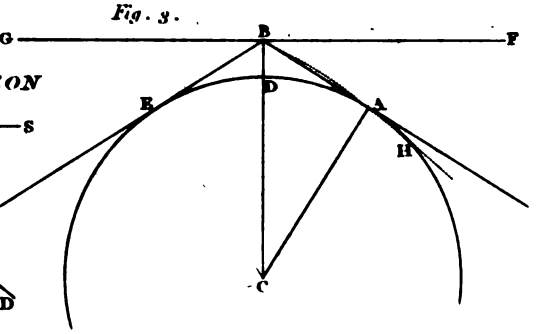


Fig. 6.

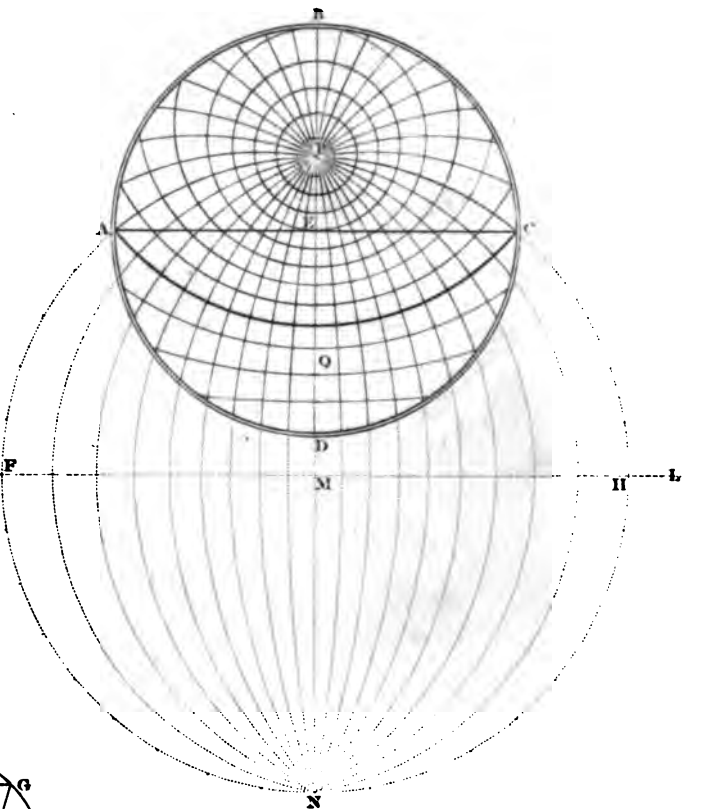
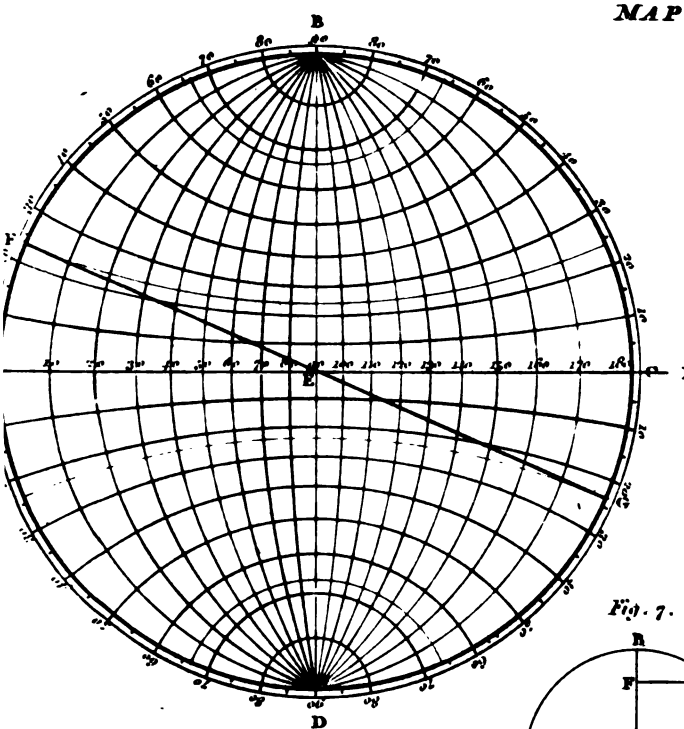


Fig. 5.

MAP



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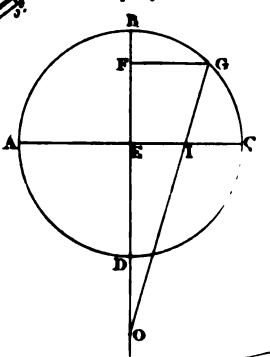

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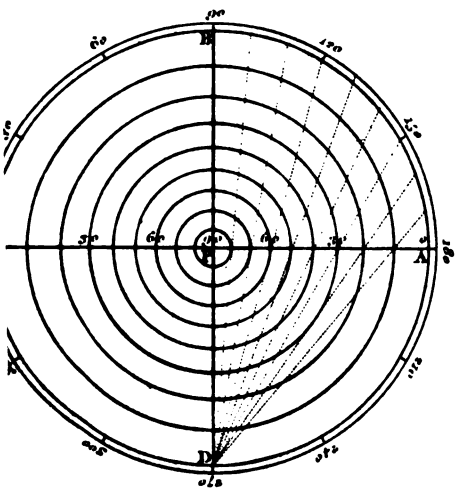

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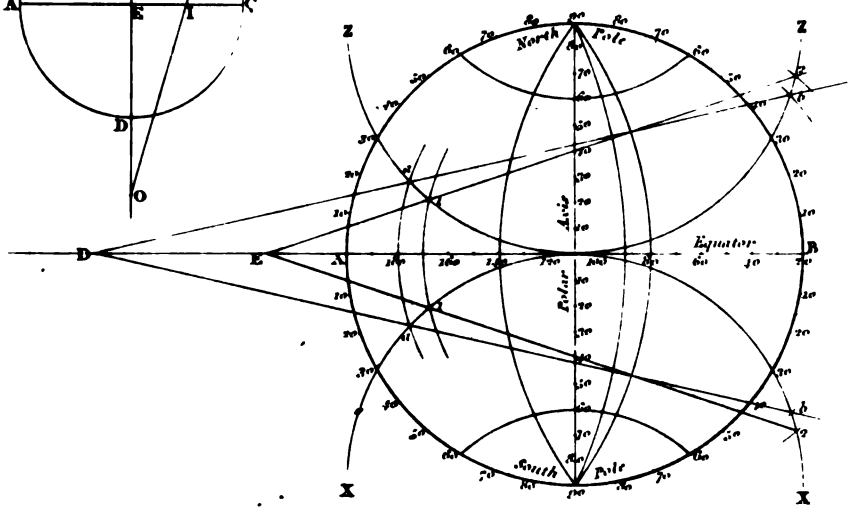

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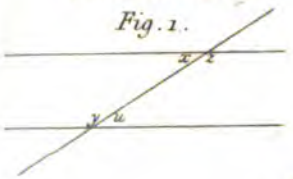
W. Lowry Sculp.

GEOMETRY.

ALTERNATE ANGLES

Fig. 1.



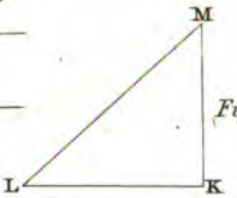
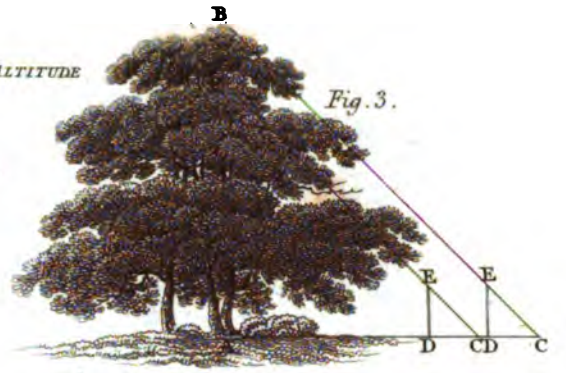


Fig. 2.

ALTITUDE

Fig. 3.



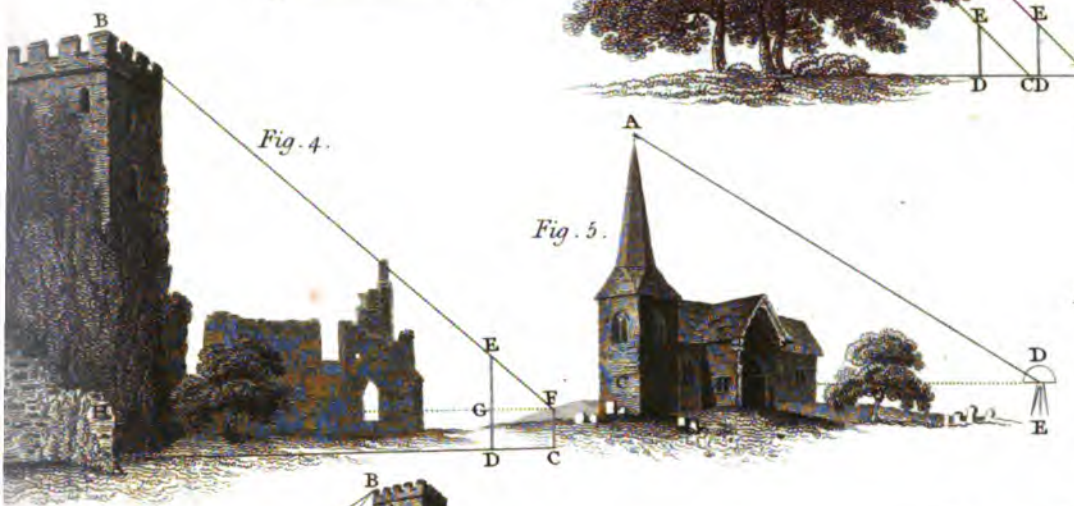
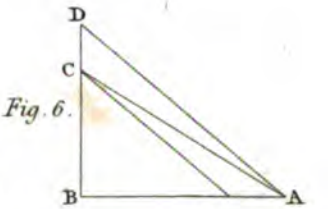


Fig. 4.

Fig. 5.



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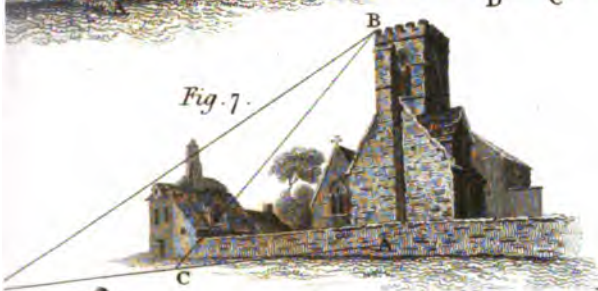

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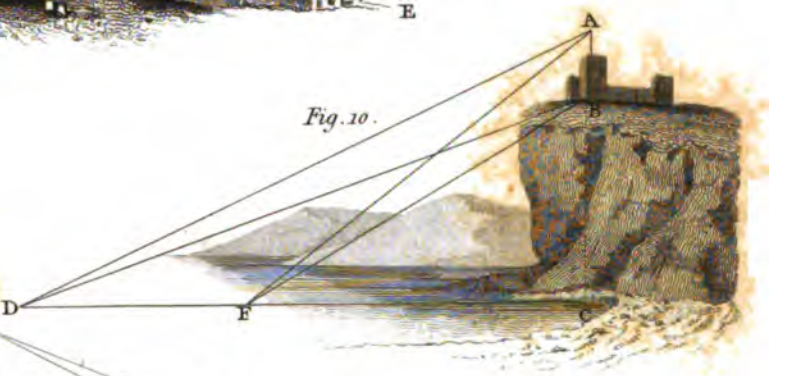
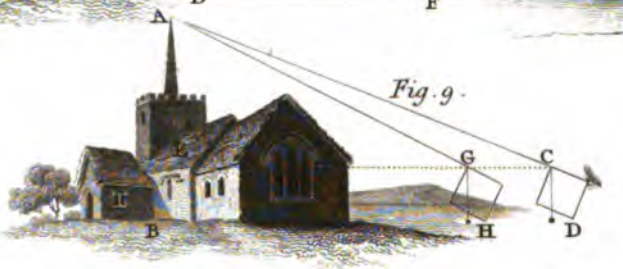


Fig. 10.

Fig. 8.



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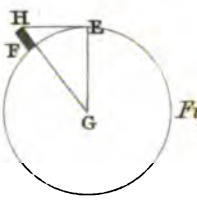

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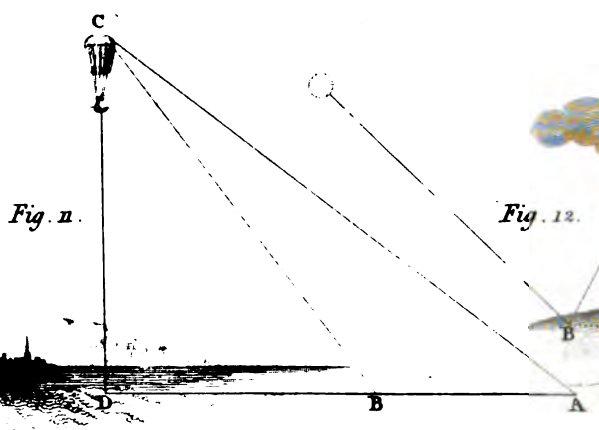

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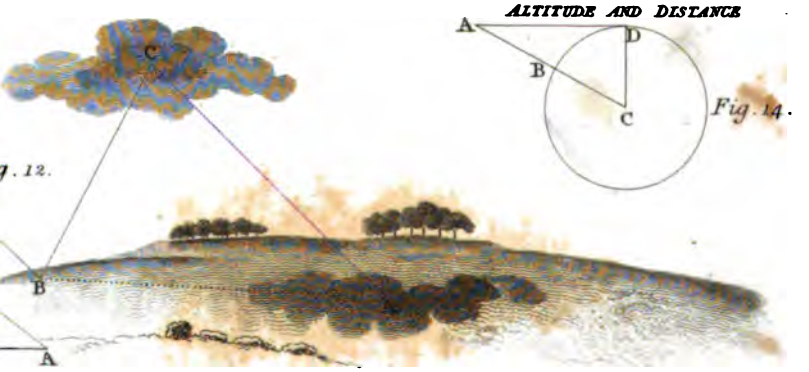

Fig. 12.

ALTITUDE AND DISTANCE

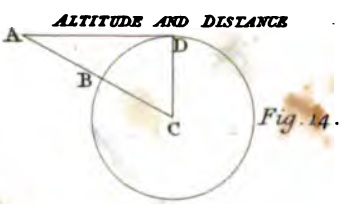

Fig. 14.

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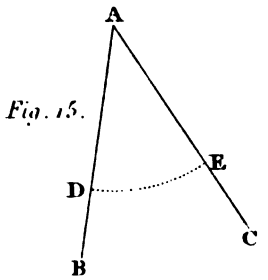
Engraved by Wilson Lowry.

GEOMETRY.

ANGLE.



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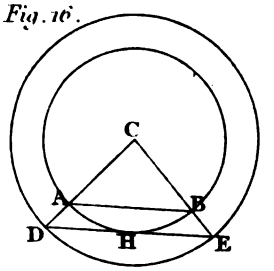

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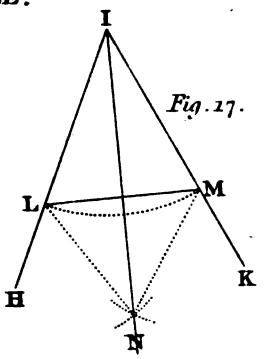

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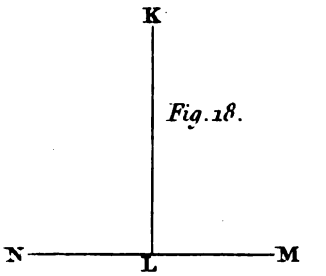

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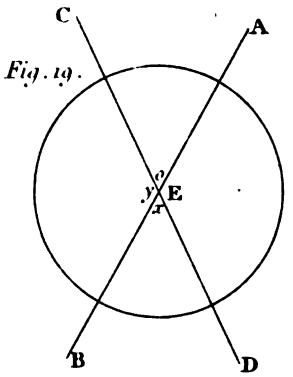

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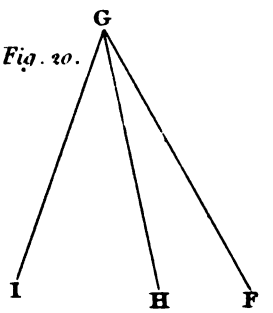
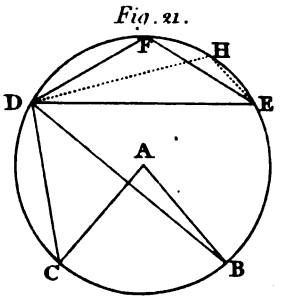


Fig. 20.



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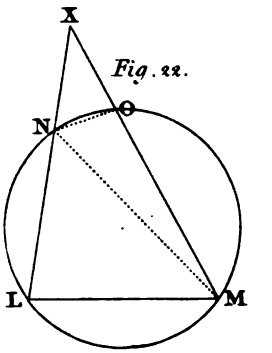

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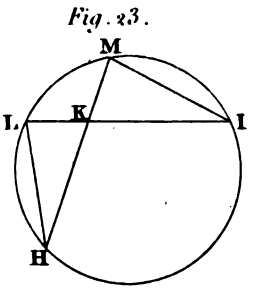

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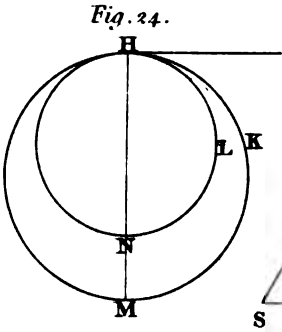

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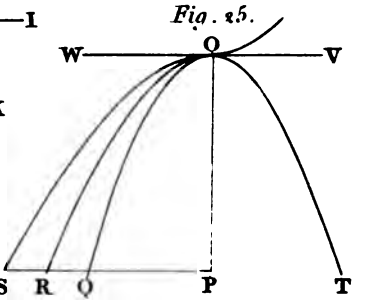

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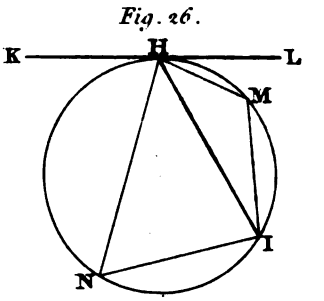

Fig. 26.

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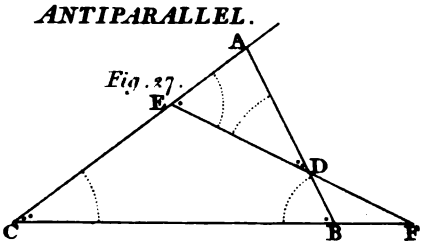
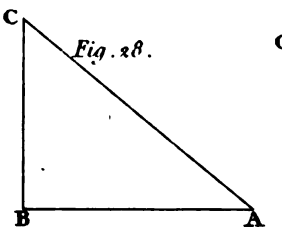


Fig. 27.

APPLICATION &c.



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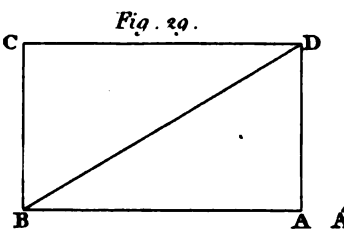

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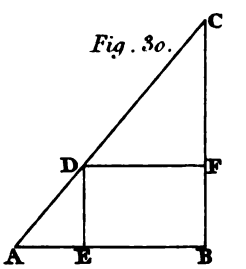

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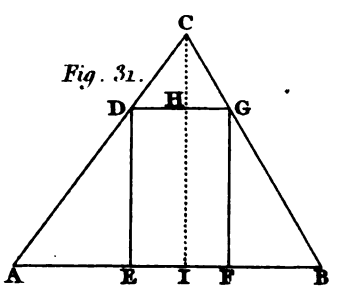

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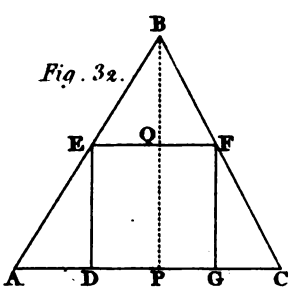

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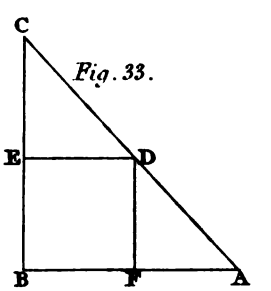

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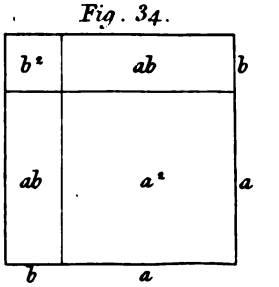


Fig. 34.

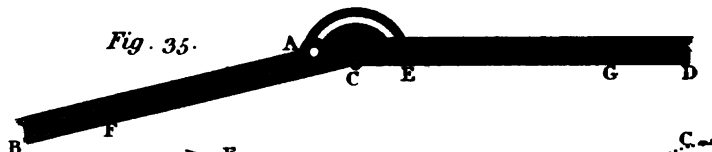
Published as the Act directs, Jan.ʸ 1.1803, by Longman & Rees, Paternoster Row.

Engraved by Wilson, Lowry

GEOMETRY.

BEVEL &c.

Fig. 35.



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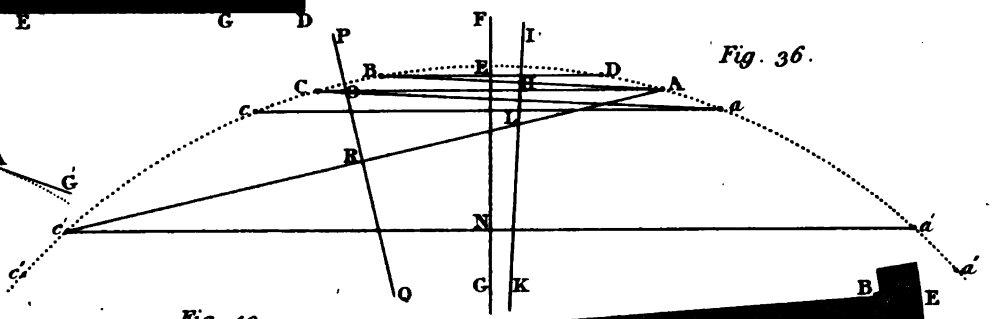

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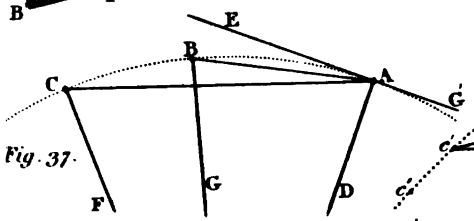

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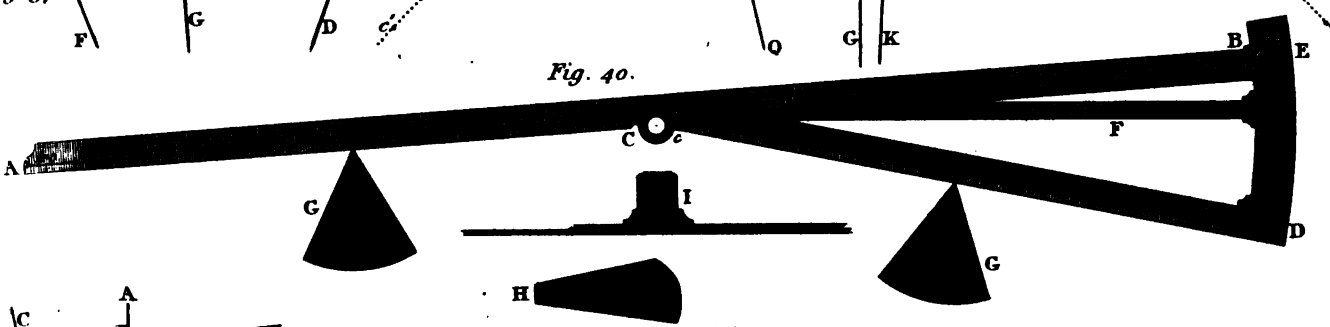


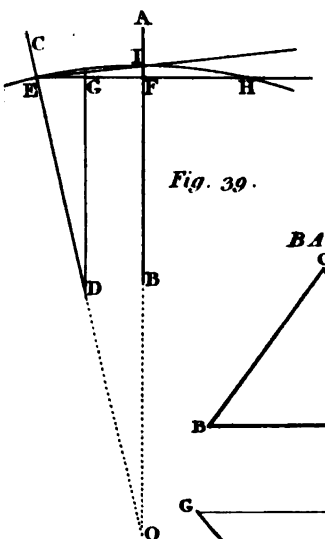
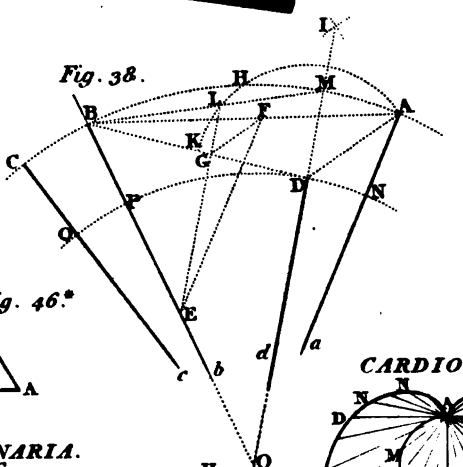


Fig. 39.

Fig. 38.



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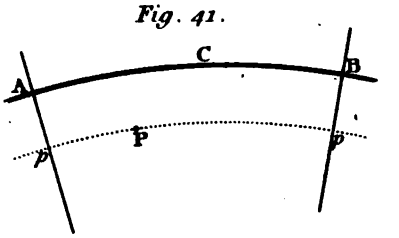

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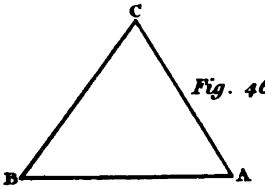


Fig. 46.*

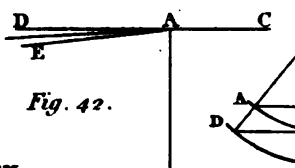


Fig. 42.

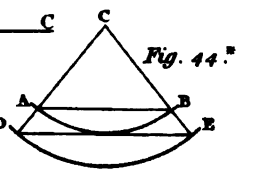


Fig. 44.*

CARDIOIDE.

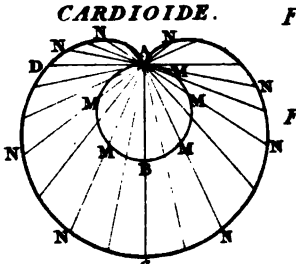


Fig. 48.*

CATENARIA.

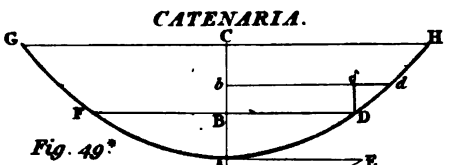


Fig. 49.*

ARCH

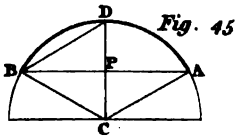


Fig. 45.*

CHORD.

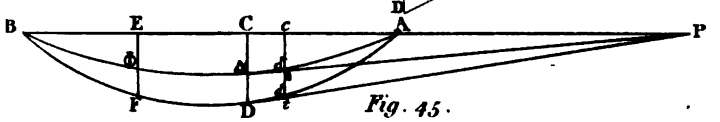
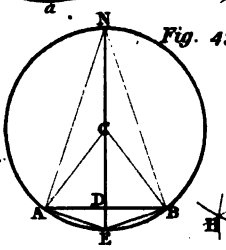


Fig. 45.

Fig. 43.



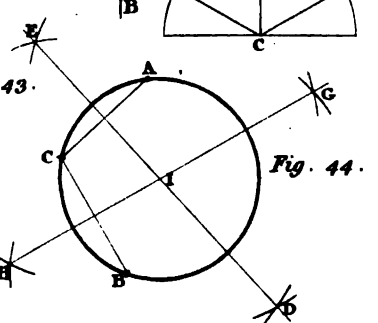
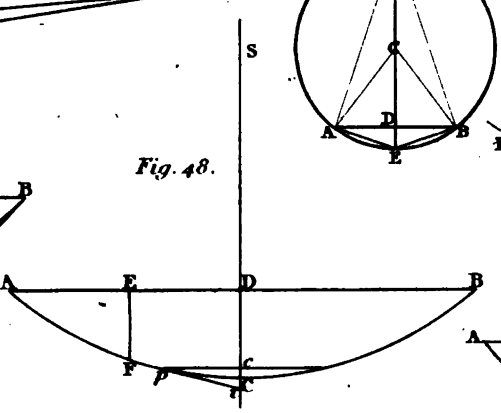


Fig. 44.

Fig. 48.



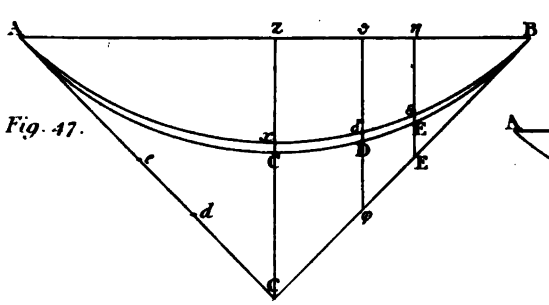


Fig. 47.

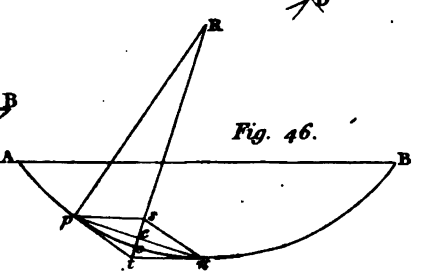


Fig. 46.

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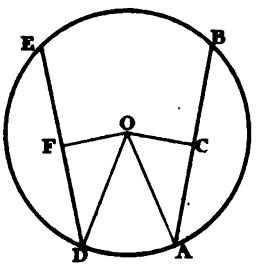
GEOMETRY.

CIRCLE.

Fig. 49.



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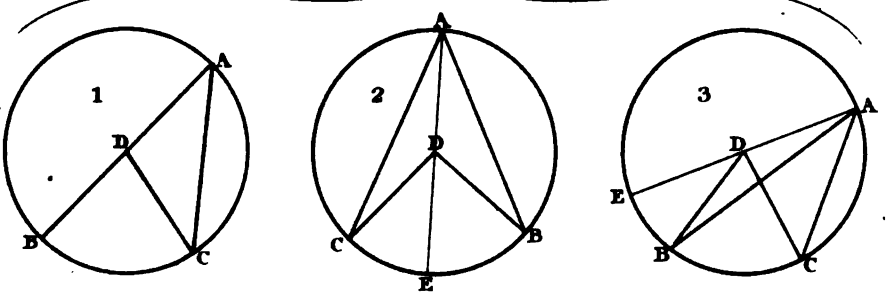

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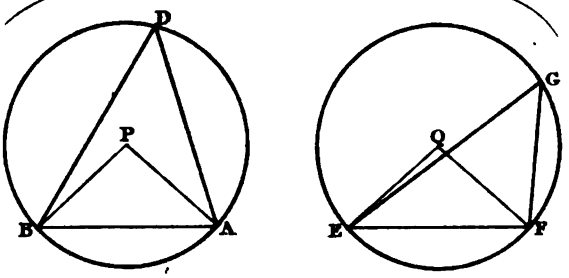

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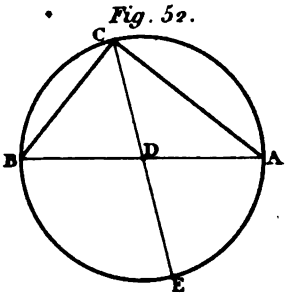

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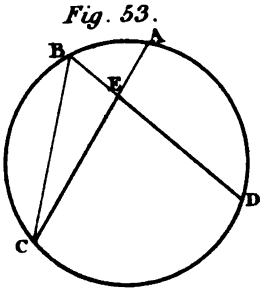
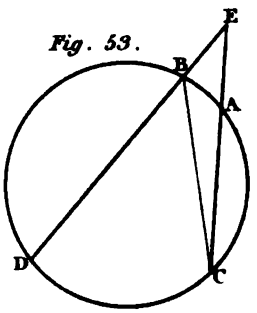


Fig. 53.



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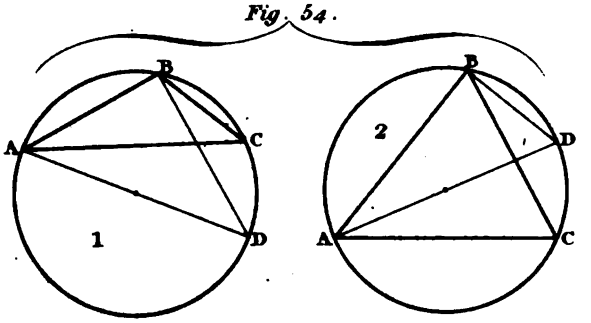

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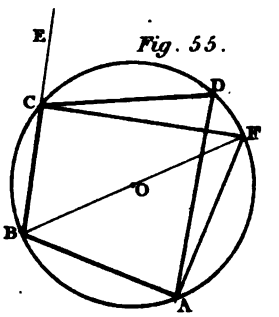

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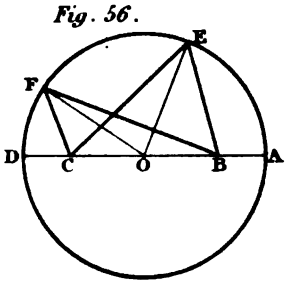

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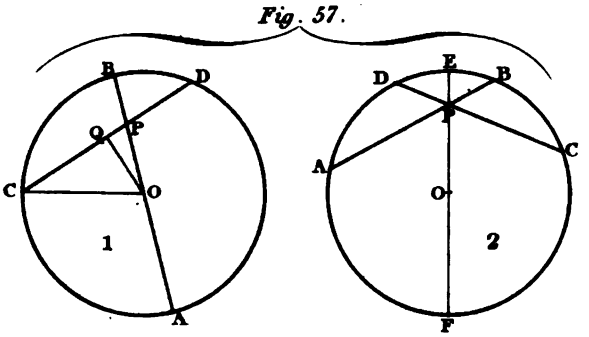

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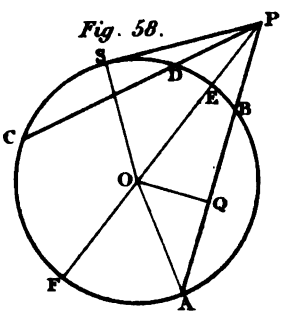

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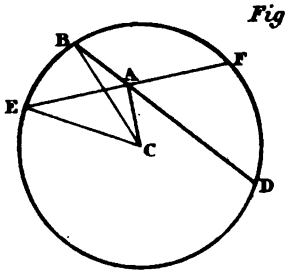

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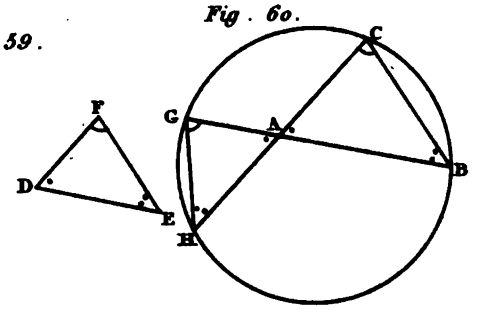

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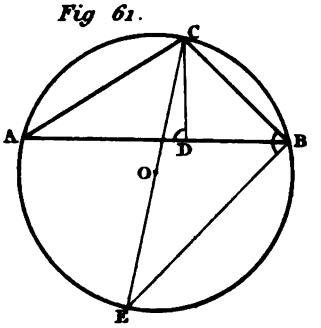

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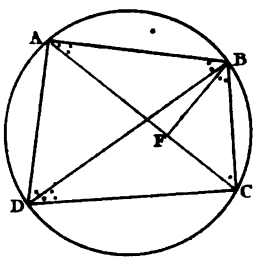
GEOMETRY.

CIRCLE.

Fig. 62.



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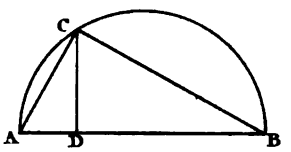

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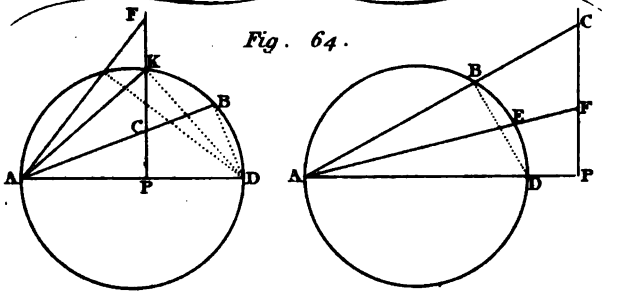
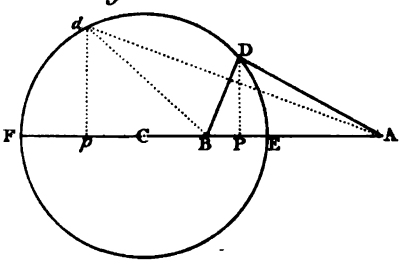


Fig. 65.



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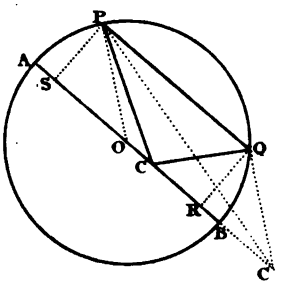

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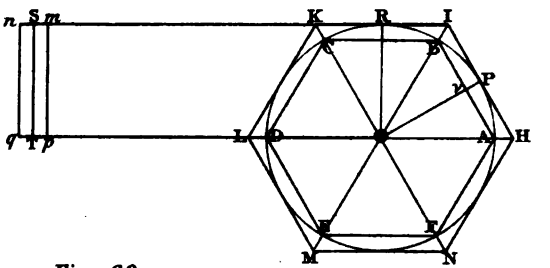

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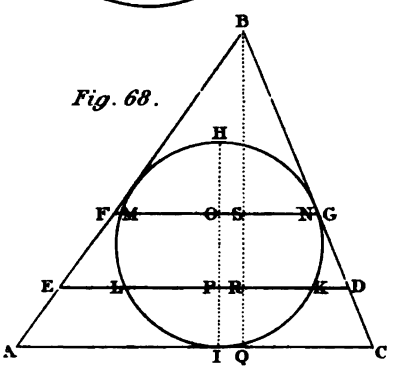

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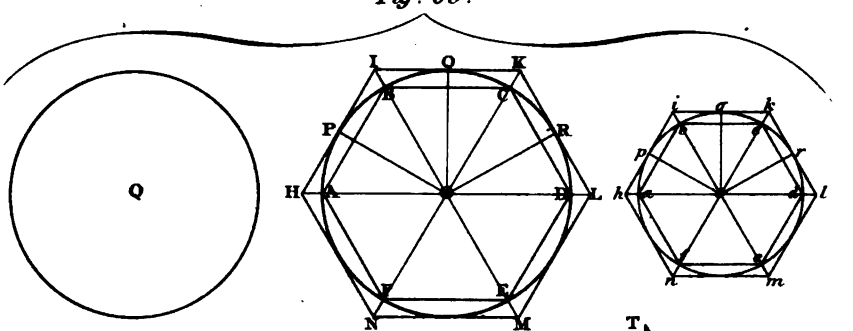

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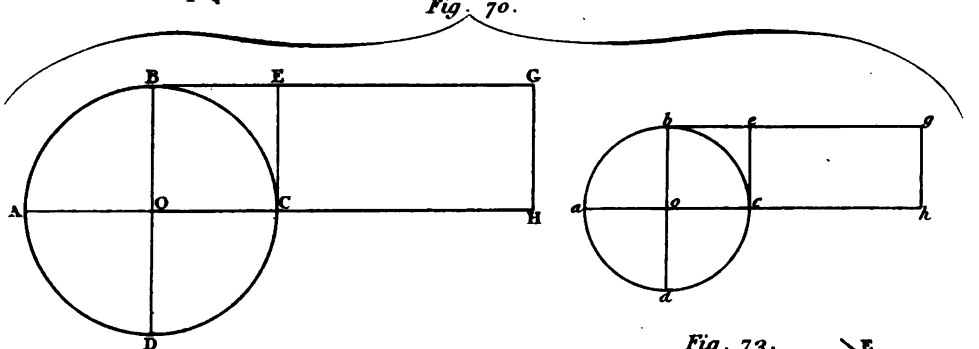

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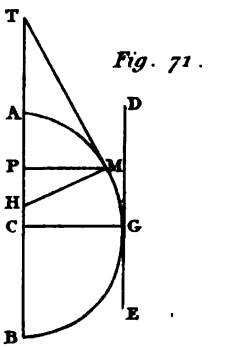

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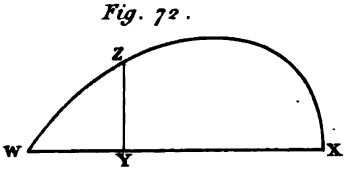
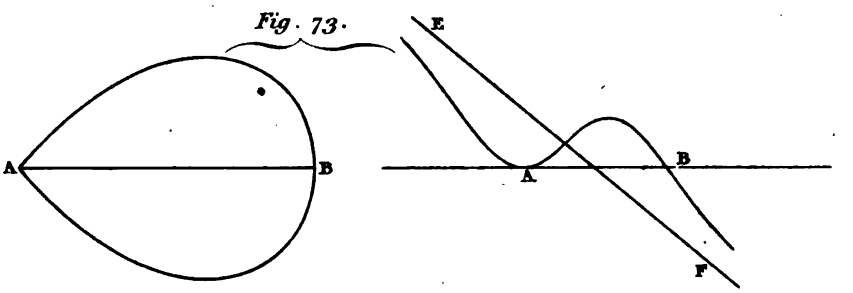


Fig. 73.



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DECAGON
Fig. 74.

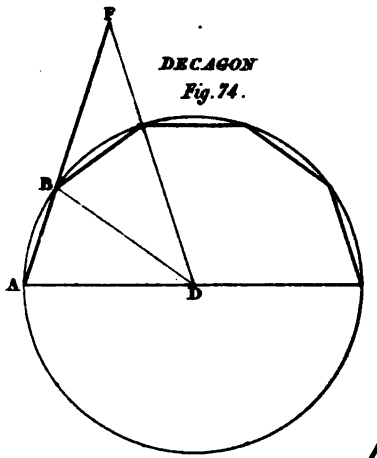
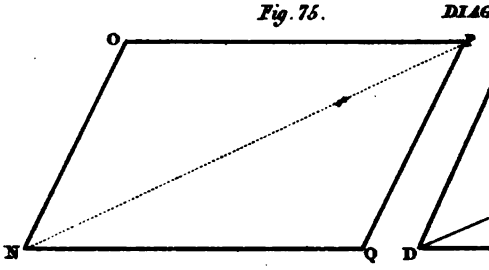


Fig. 75.



DIAGONAL
Fig. 76.

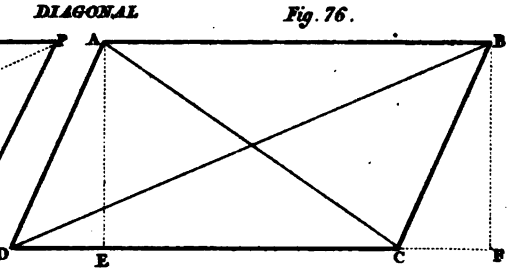
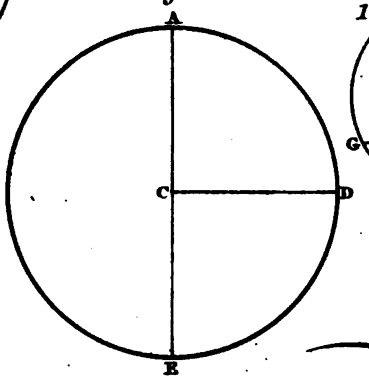


Fig. 78.



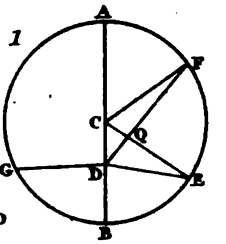


Fig. 79.

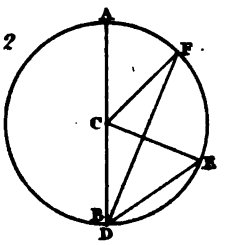
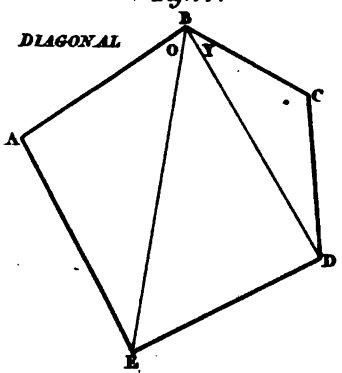
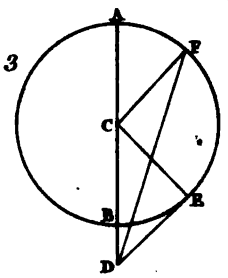


Fig. 77.

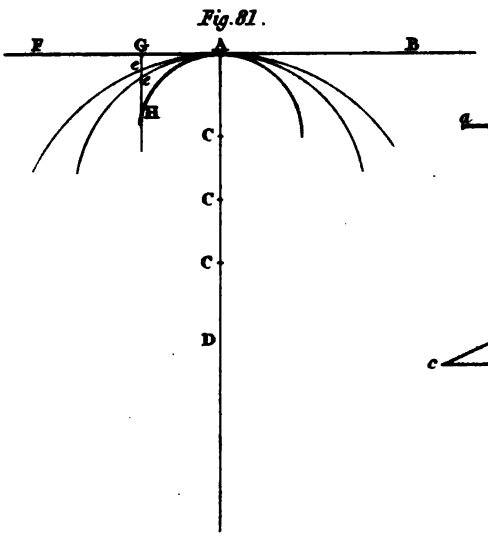
DIAGONAL



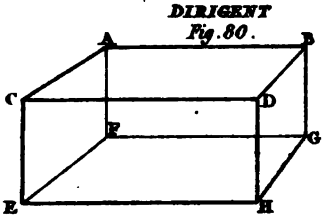


DIAMETER.

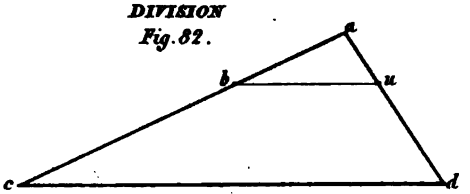
Fig. 81.



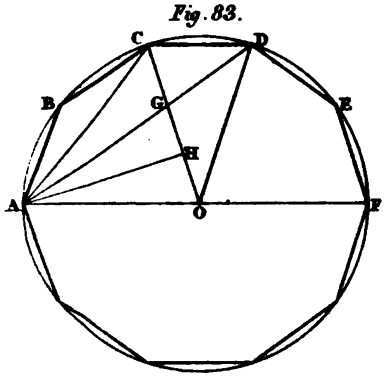
DIRIGENT
Fig. 80.



DIVISION
Fig. 82.

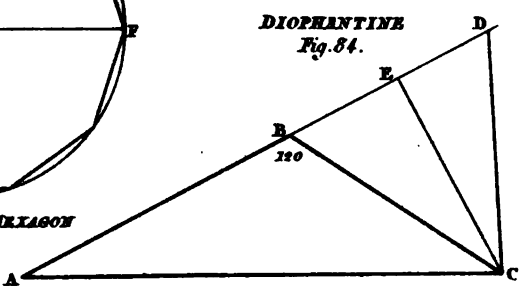


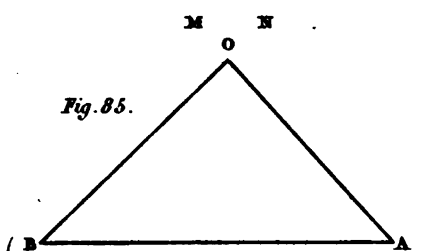
DECAGON *
Fig. 83.



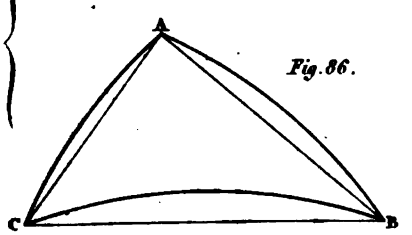
* For DODECAGON see HEXAGON

DIOPHANTINE
Fig. 84.





DISTANCE



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GEOMETRY.

EXTREME & MEAN PROPORTION.

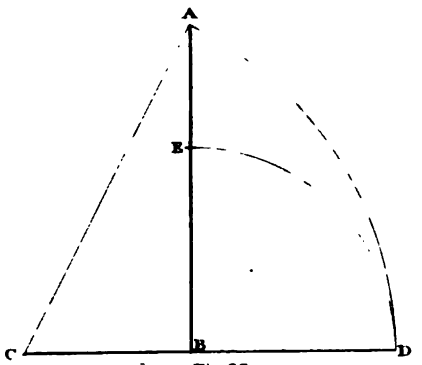


Fig. 87.

FRUSTUM.

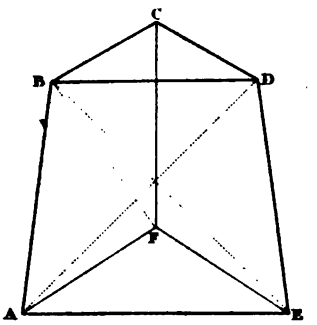


Fig. 88.

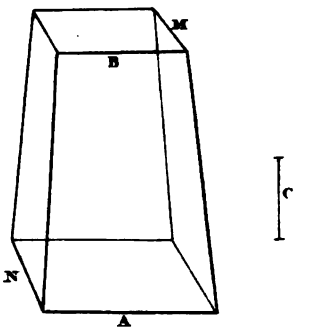


Fig. 89.

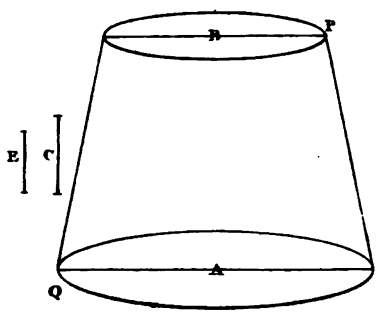


Fig. 90.

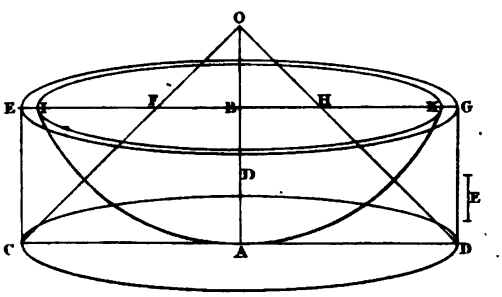


Fig. 91.

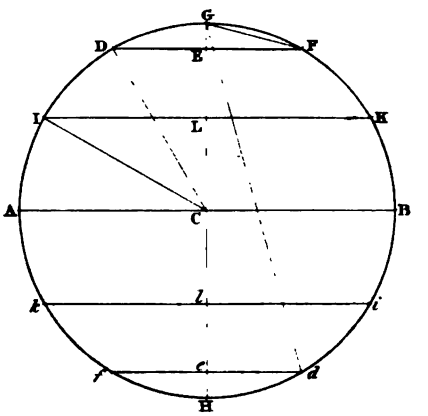


Fig. 92.

C

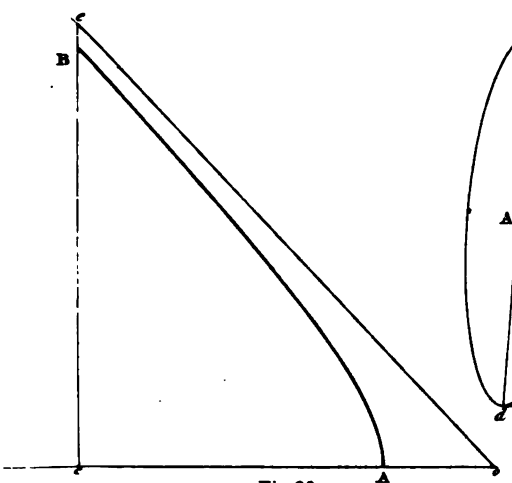
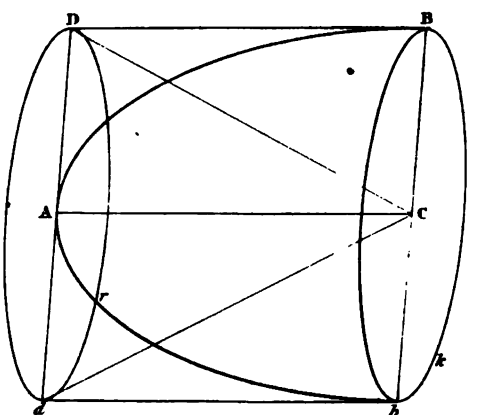


Fig. 93.



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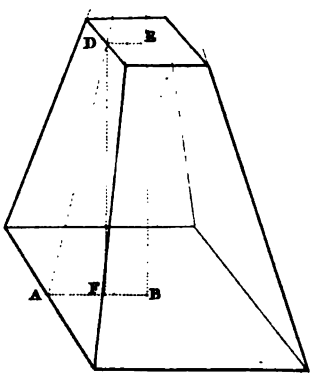

Fig. 95.

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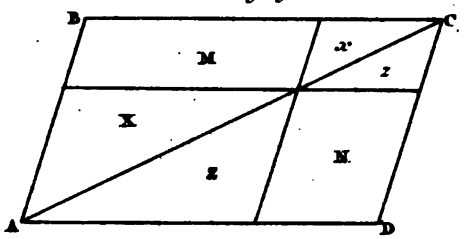
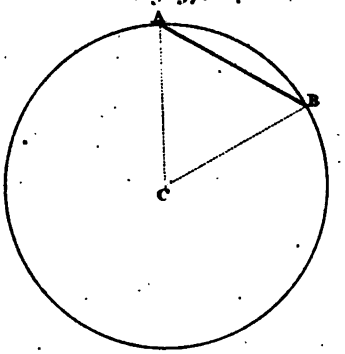
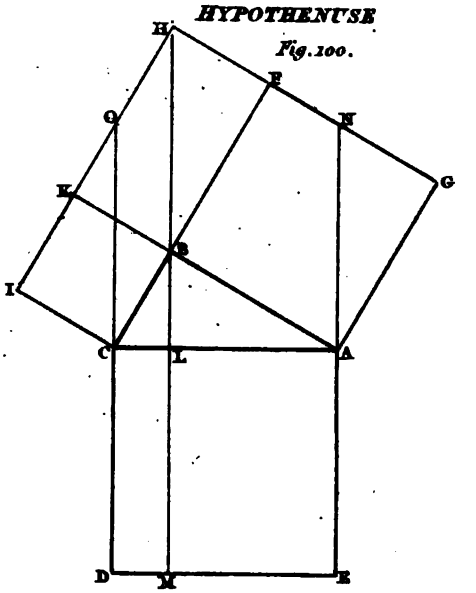
GNOMON
Fig. 96.



HEXAGON
Fig. 97.



HYPOTHENUSE
Fig. 100.



HONEY Comb
Fig. 98.

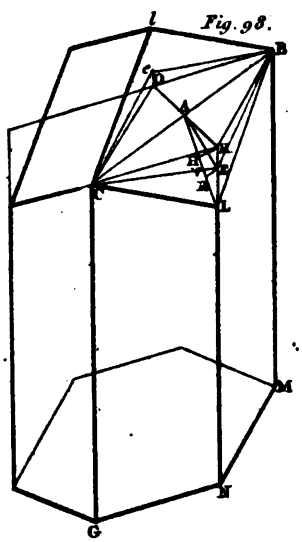
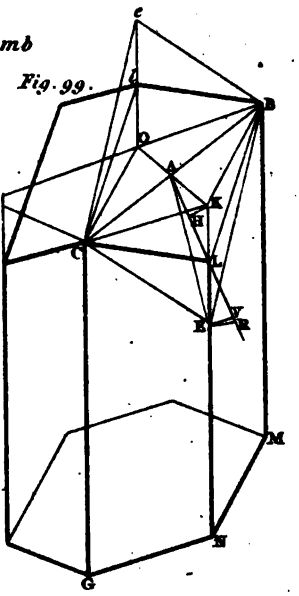
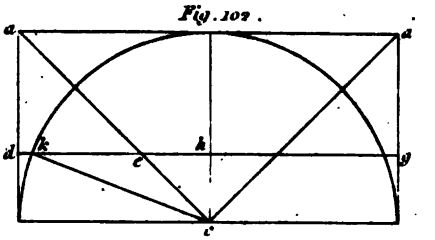


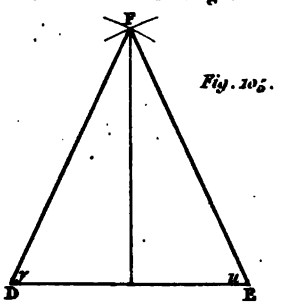
Fig. 99.



INDIVISIBLES
Fig. 102.



ISOSCELES Triangle
Fig. 105.



INCLINATION of Planes
Fig. 101.

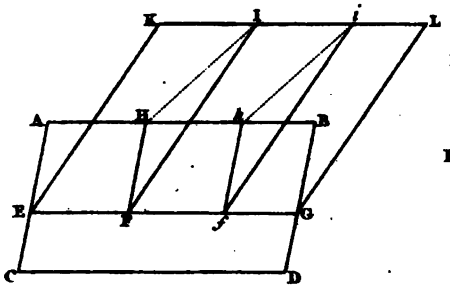
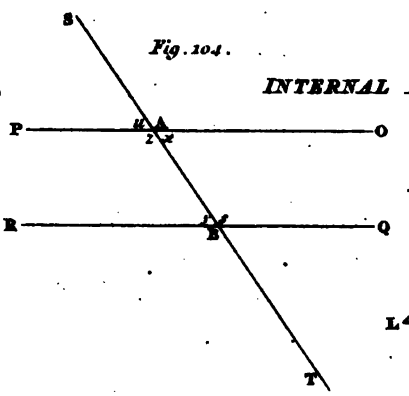
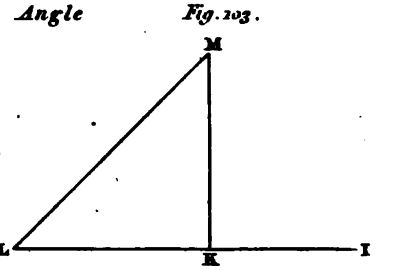


Fig. 104.



INTERNAL Angle
Fig. 103.



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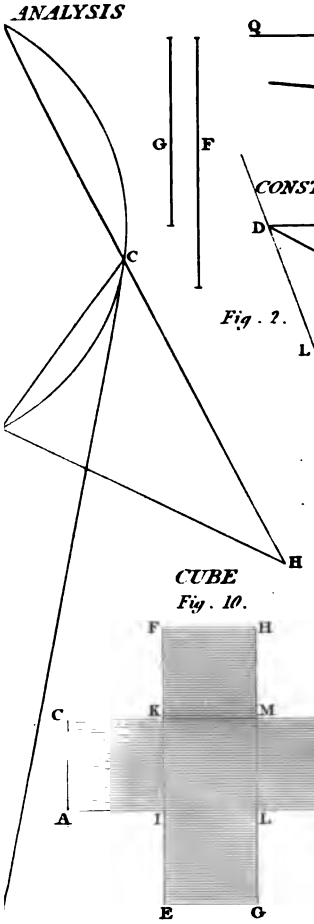
GEOMETRY.

FLUXIONS.

ANALYSIS



ASYMPTOTE

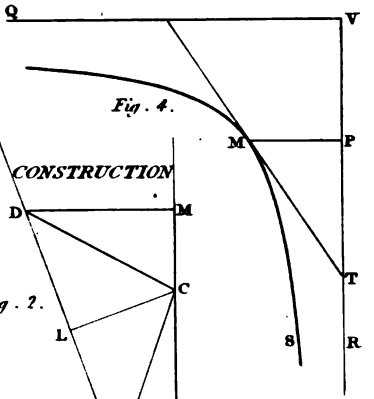


Fig. 4.

CONSTRUCTION

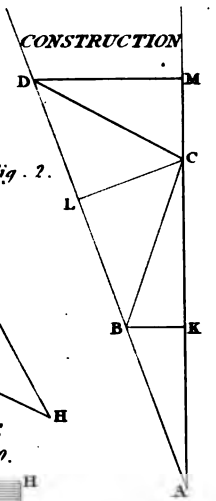


Fig. 2.

HYPERBOLIC LOGARITHMS

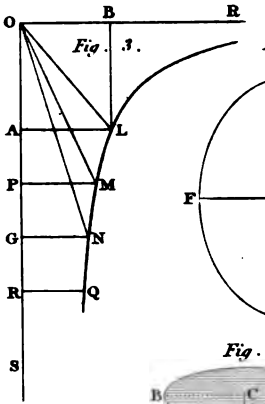
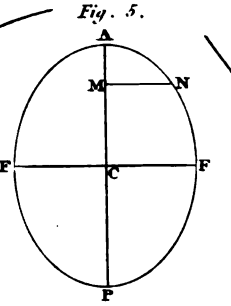


Fig. 3.

Fig. 5.



AXIS of the ELLIPSE and HYPERBOLA.

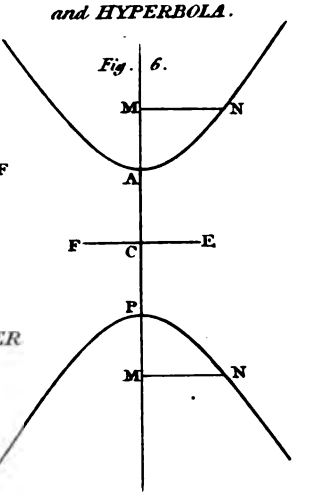
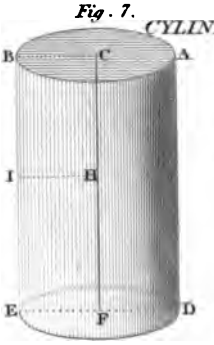


Fig. 6.

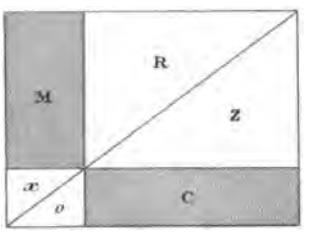
Fig. 7.

CYLINDER



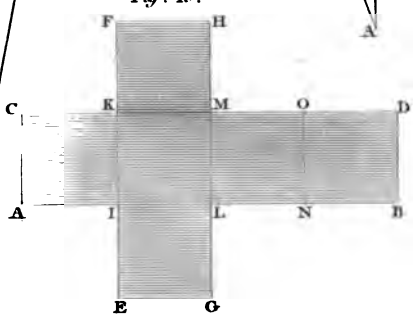
COMPLEMENT

Fig. 8.



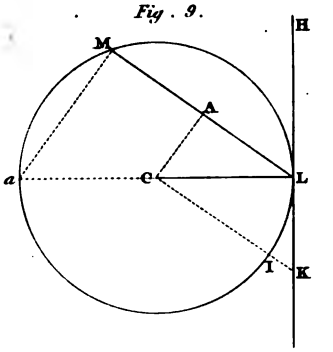
CUBE

Fig. 10.



CONTACT

Fig. 9.



CYCLOGRAPH

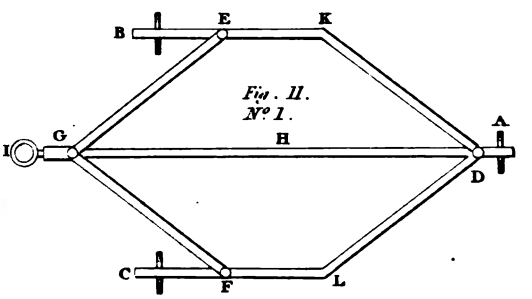
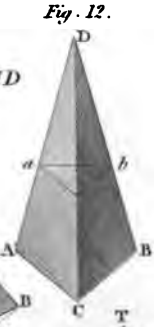


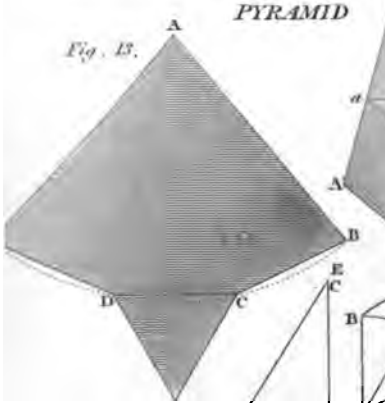
Fig. 11. N° 1.

Fig. 12.



PYRAMID

Fig. 13.



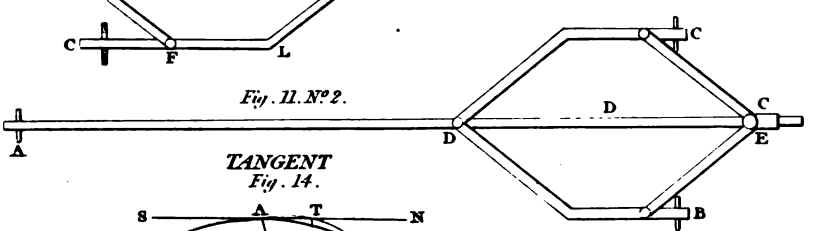
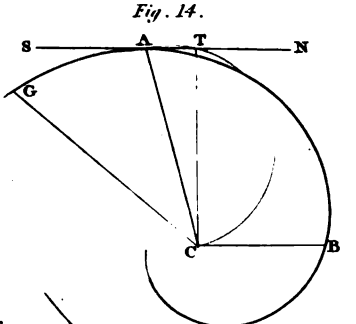


Fig. 11. N° 2.

TANGENT

Fig. 14.



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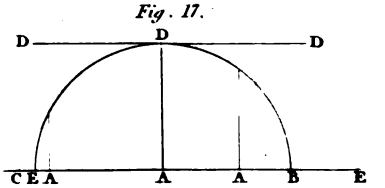

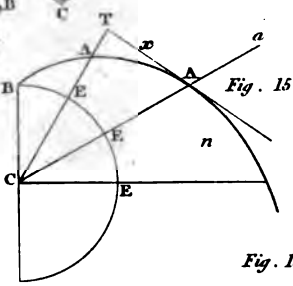

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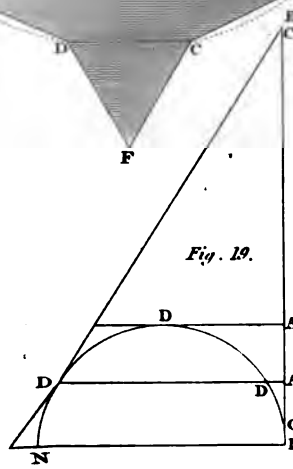
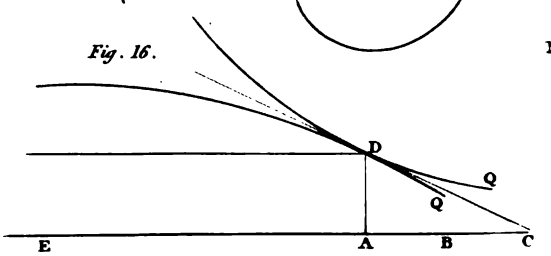


Fig. 19.

Fig. 16.



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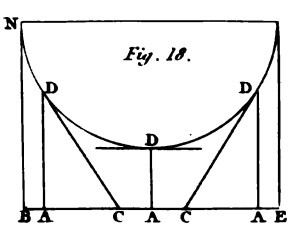

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GEOMETRY.

LINE.

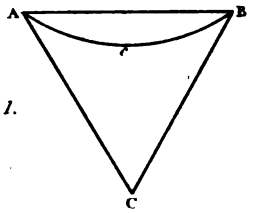


Fig. 1.

LUNES.

Fig. 2.

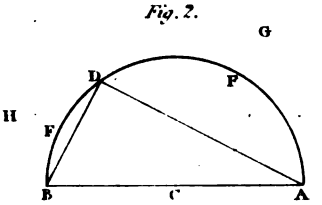


Fig. 3.

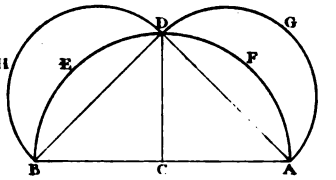


Fig. 3.

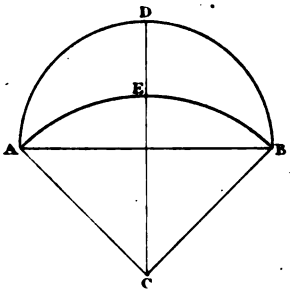
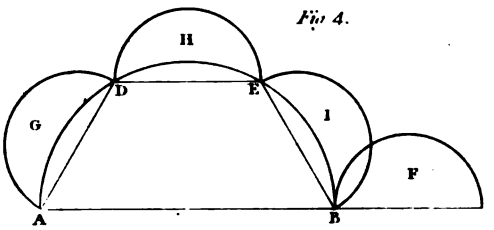


Fig. 4.



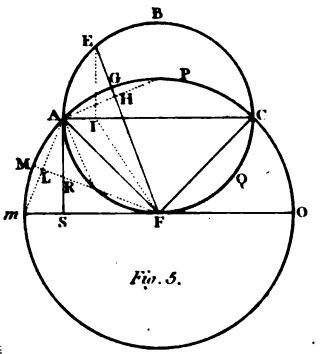


Fig. 5.

MULTIPLICATION.

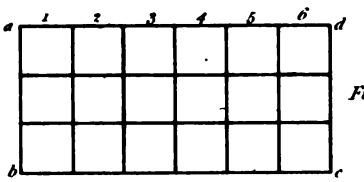


Fig. 6.

MULTIPLICATION.

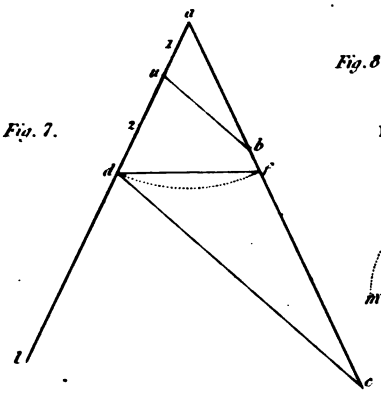


Fig. 7.

OCTAGON.

Fig. 8.

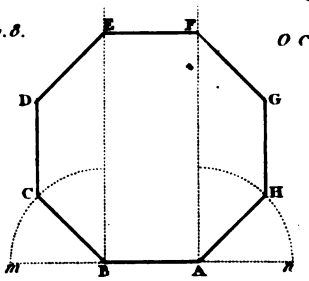
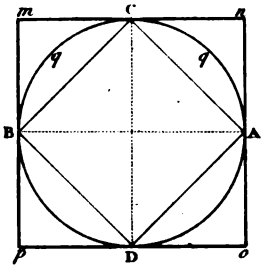


Fig. 9.



PARALLEL.

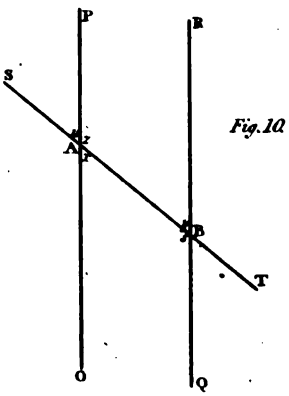


Fig. 10.

PARALLEL RULER.

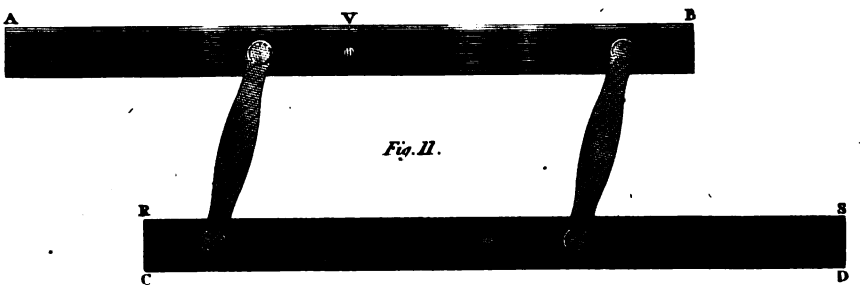
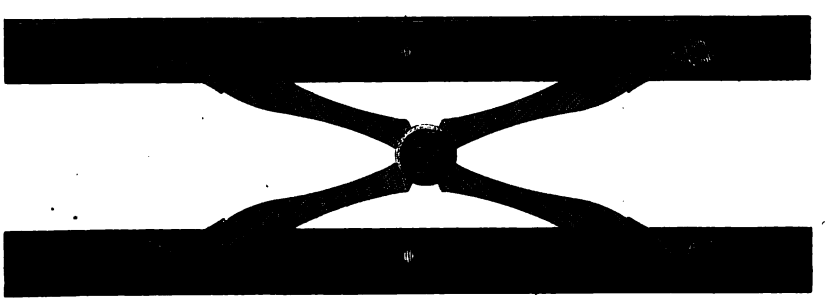


Fig. 11.

Fig. 12.



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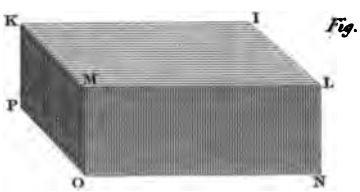


Fig. 13.

PARALLELOGRAM.

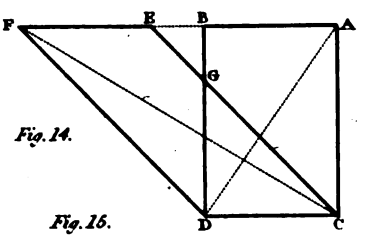
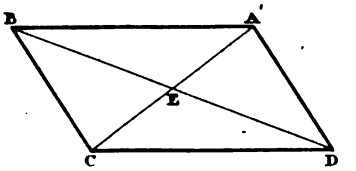


Fig. 14.

Fig. 15.



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GEOMETRY.

LINE.

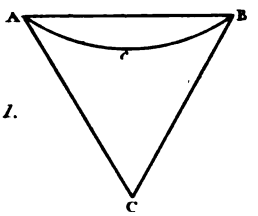


Fig. 1.

LUNES.

Fig. 2.

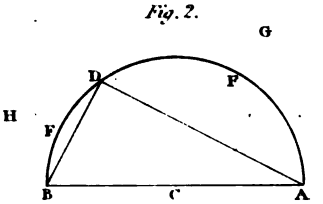


Fig. 3.

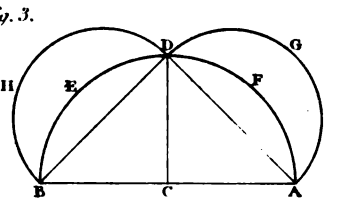
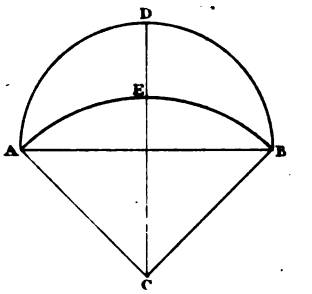


Fig. 3.



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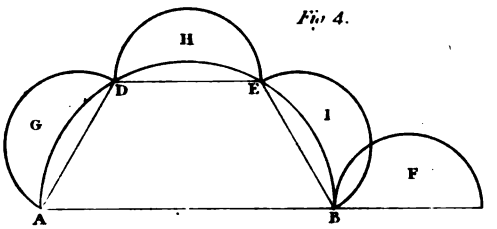

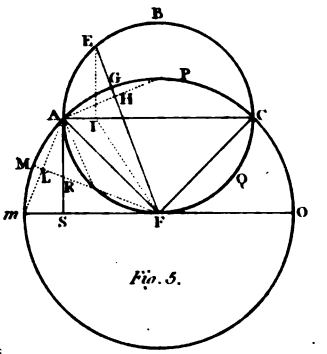

Fig. 5.

MULTIPLICATION.

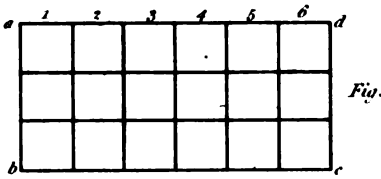

Fig. 6.

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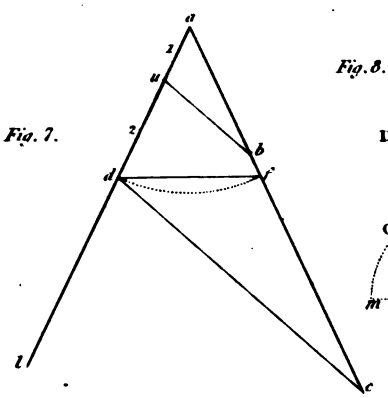
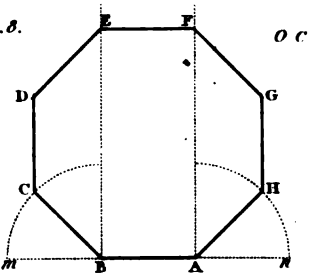


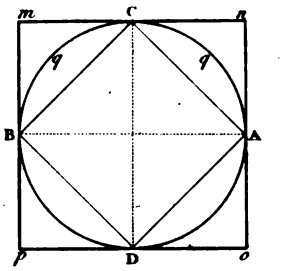
Fig. 7.

Fig. 8.



OCTAGON.

Fig. 9.



PARALLEL.

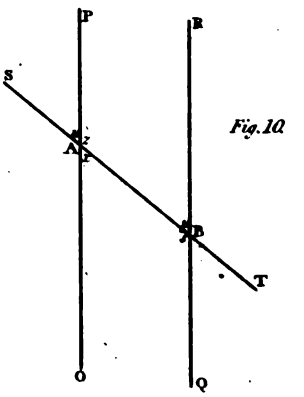


Fig. 10.

PARALLEL RULER.

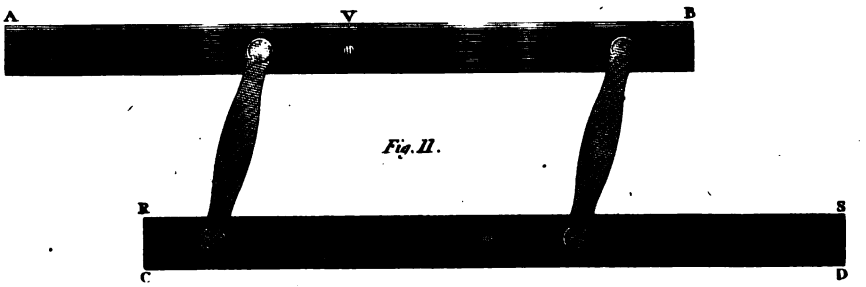
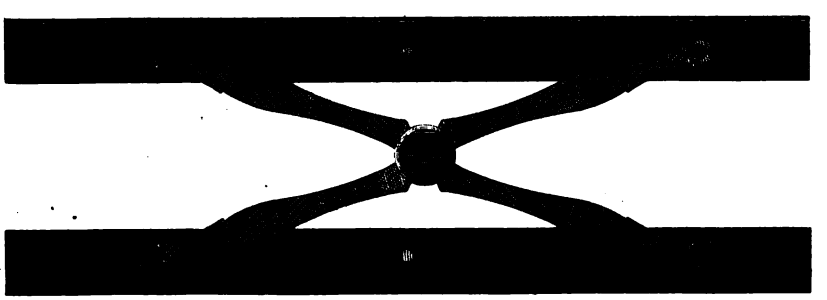


Fig. 11.

Fig. 12.



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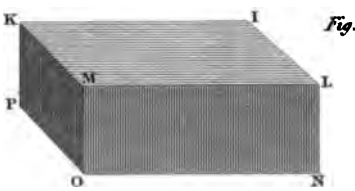


Fig. 13.

PARALLELOGRAM.

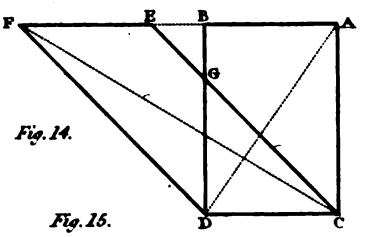
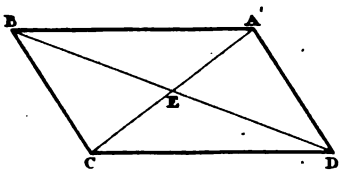


Fig. 14.

Fig. 15.



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Lowry sculp.

PELECOIDES

Fig. 1d.

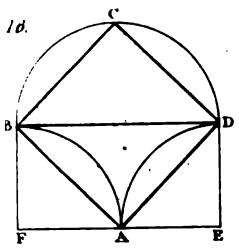


Fig. 17.

PENTAGON

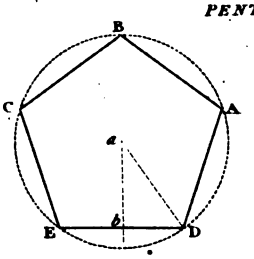
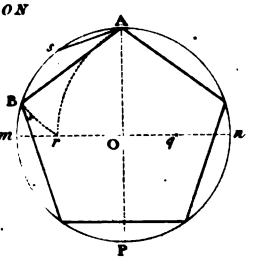
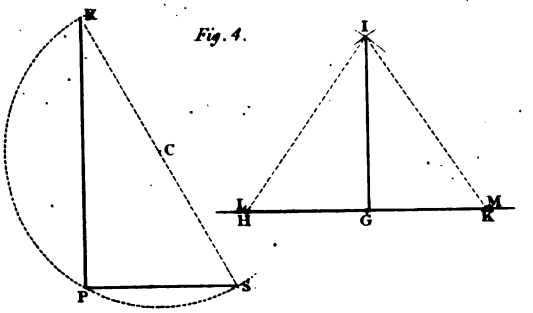


Fig. 18.



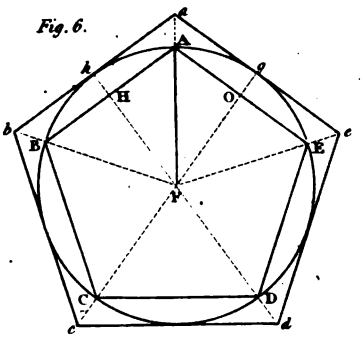
PERPENDICULAR

Fig. 4.



POLYGON

Fig. 6.



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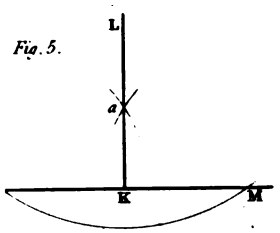
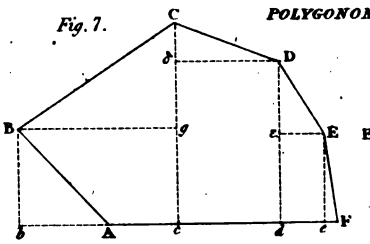


Fig. 7.

POLYGONOMETRY



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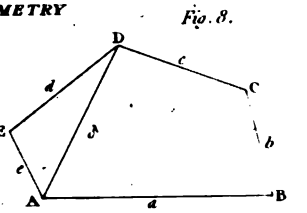

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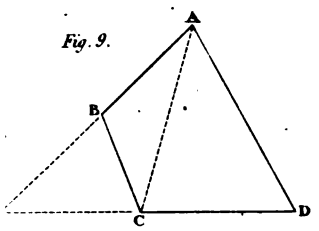

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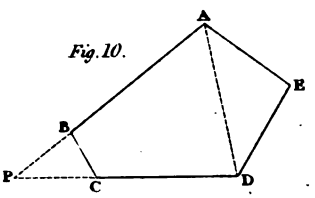

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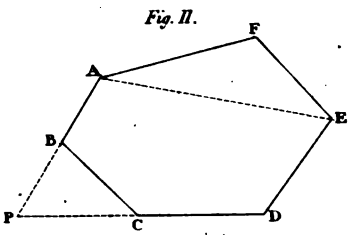


PORISM

Fig. 12.

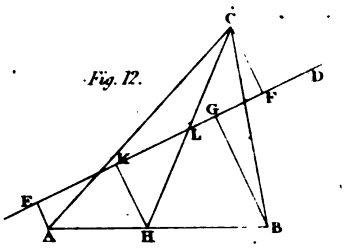
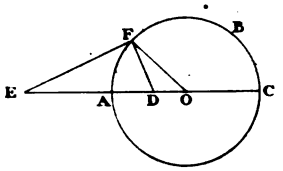


Fig. 13.



PRISM

Fig. 15.

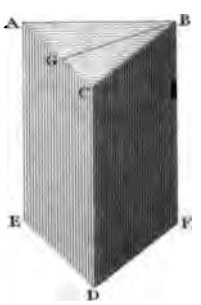


Fig. 16.

PROPORTIONAL

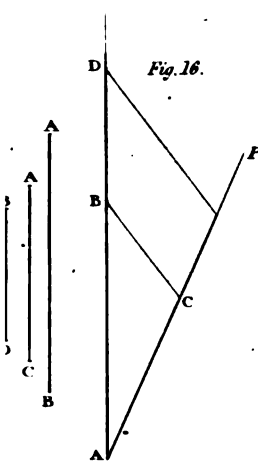
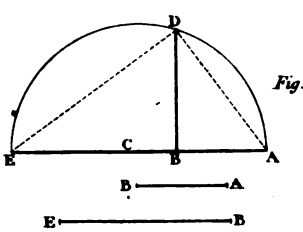
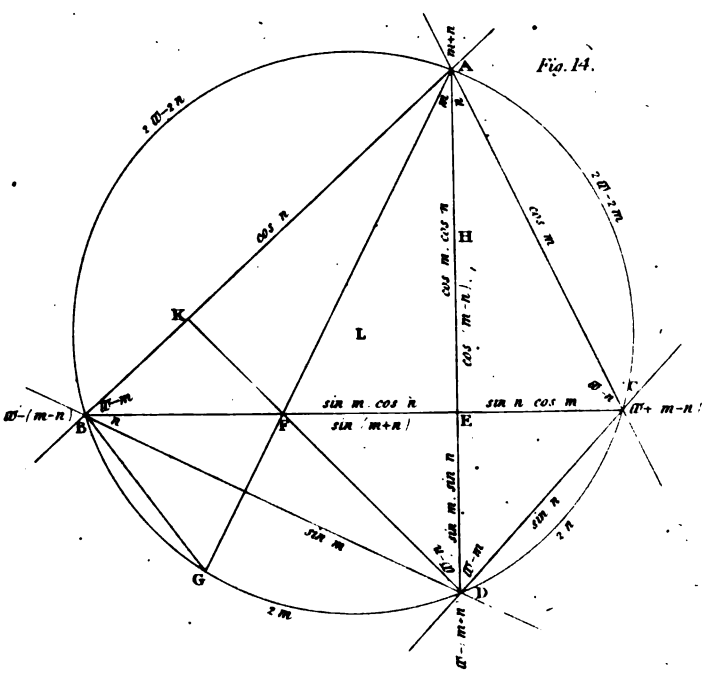


Fig. 17.



Geometry of POSITION

Fig. 14.



del. Published as the Act directs, 1814, by Longman, Hurst, Rees Orme and Brown, Paternoster Row, London. Lowry sculp.

Fig. 1.

QUALITY

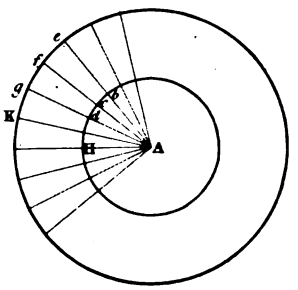
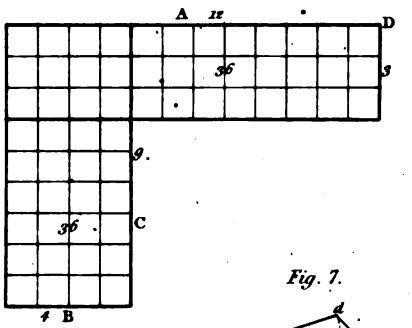


Fig. 2.

RECIPROCAL Figures.



RECTANGLE

Fig. 3.

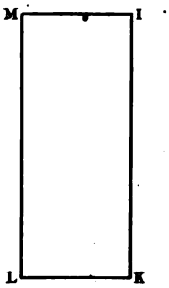


Fig. 4.

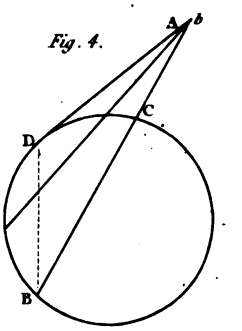
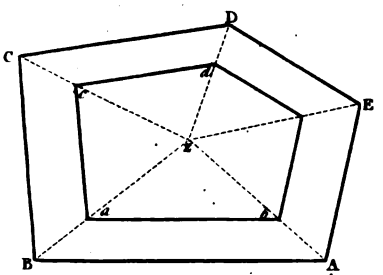


Fig. 5.

REDUCTION



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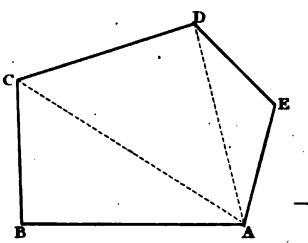


Fig. 7.

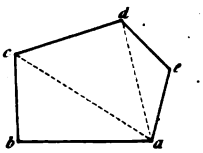


Fig. 8.

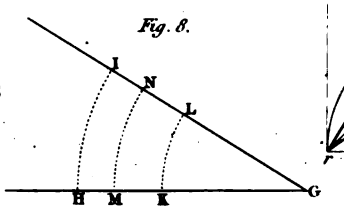
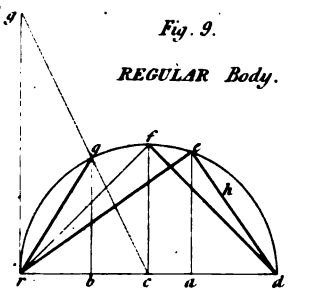


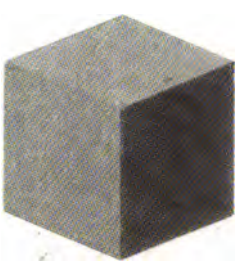
Fig. 9.

REGULAR Body.



TETRAHEDRON

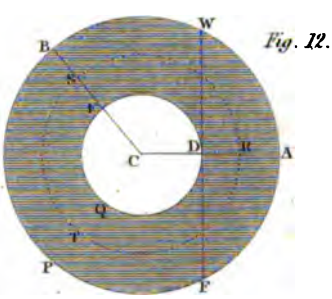
CUBE



OCTAHEDRON

RING

Fig. 12.

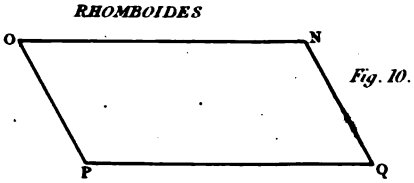


DODECAHEDRON

ICOSAHEDRON

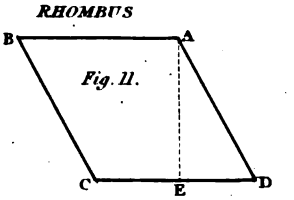
RHOMBOIDES

Fig. 10.



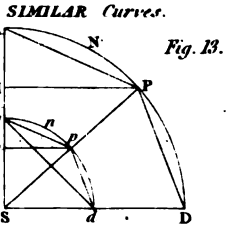
RHOMBUS

Fig. 11.



SIMILAR Curves.

Fig. 13.



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SCALE

Fig. 1.

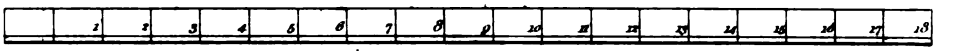
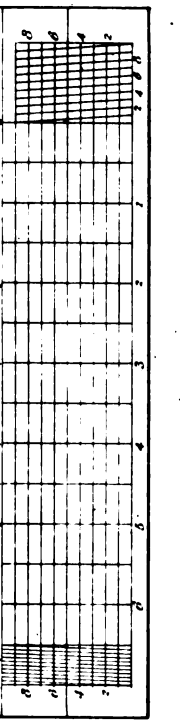
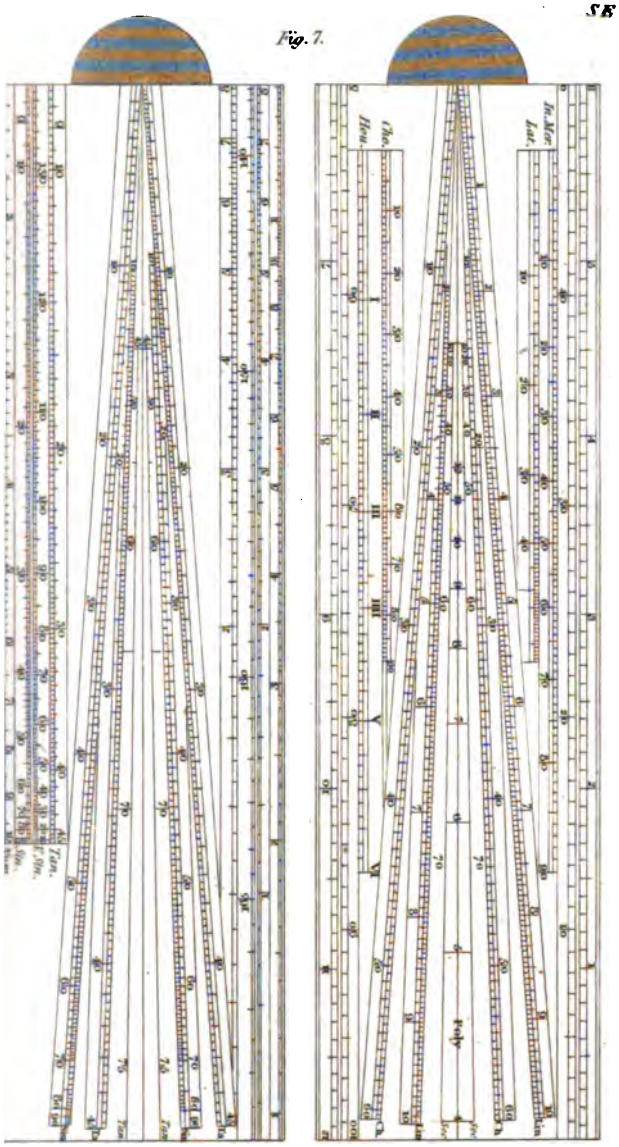


Fig. 2.



SECTOR

Fig. 7.



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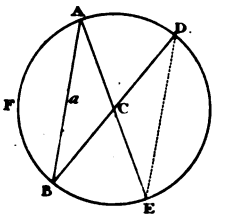
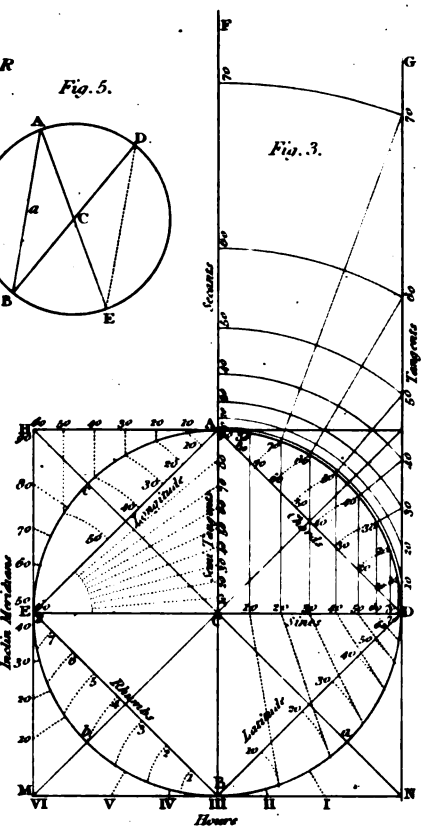
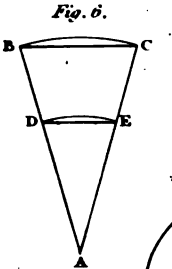


Fig. 3.



SECANT

Fig. 6.



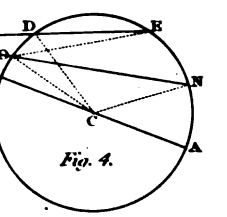


Fig. 4.

Fig. 9.

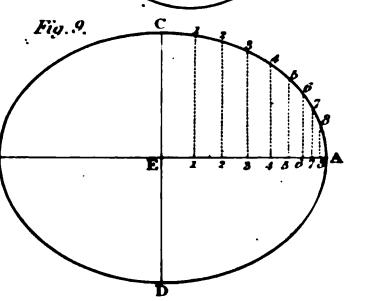


Fig. 11.

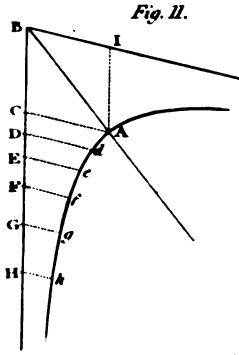
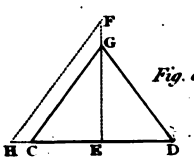


Fig. 8.



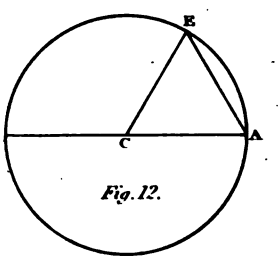


Fig. 12.

SEGMENT

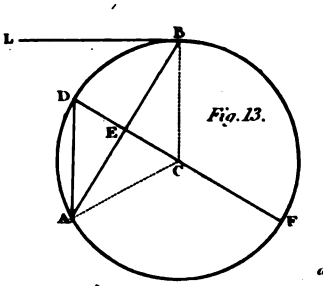
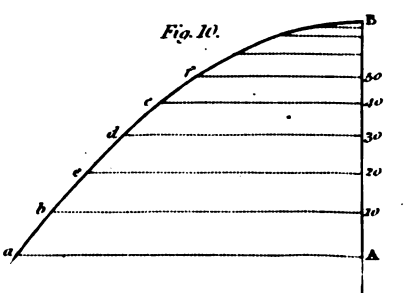


Fig. 13.

Fig. 10.



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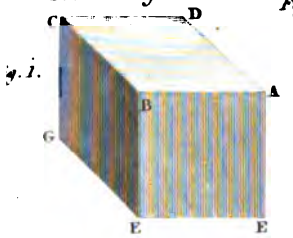
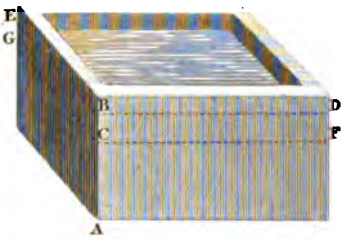
GEOMETRY.

SOLID Angle



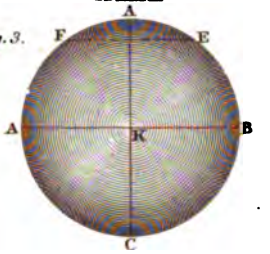
SOLIDITY

Fig. 2.



SPHERE

Fig. 3.



SPHEROID

Fig. 4.

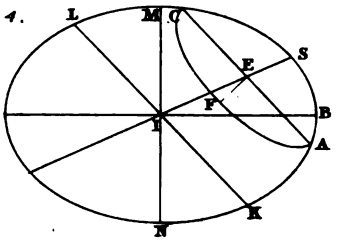
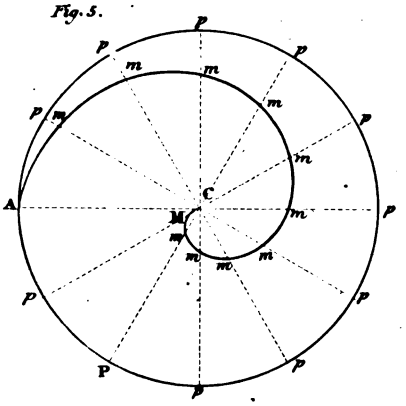
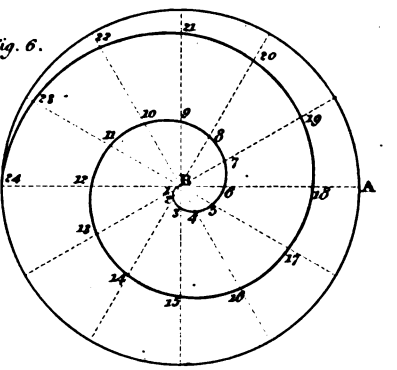


Fig. 5.



SPIRAL

Fig. 6.



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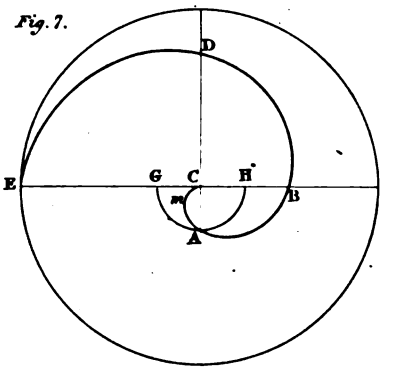

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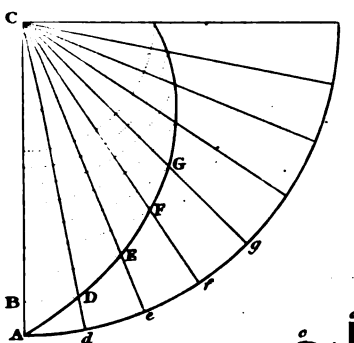

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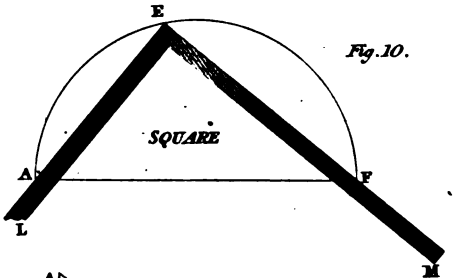
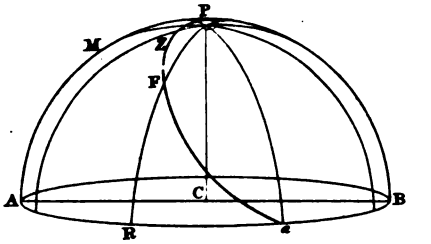


SQUARE

Fig. 8.



Tee SQUARE

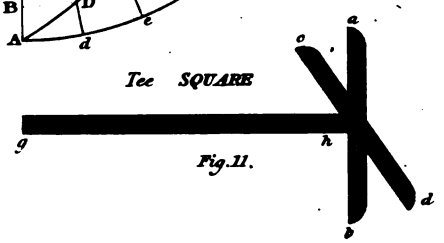
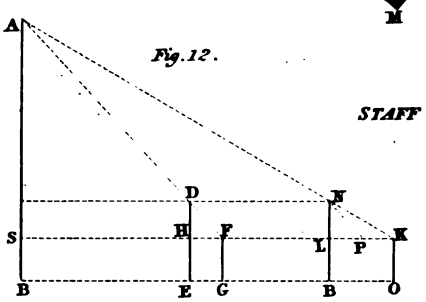


Fig. 11.

Fig. 12.



STAFF

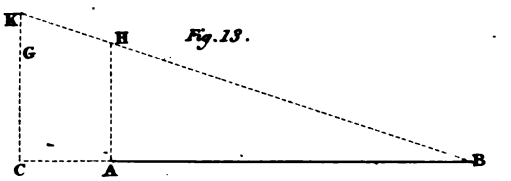
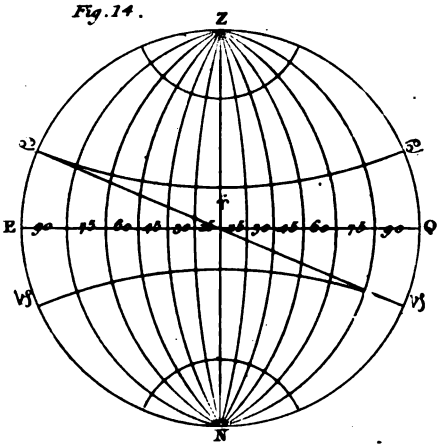


Fig. 13.

Fig. 14.



STEREOGRAPHIC Projection

Fig. 15.

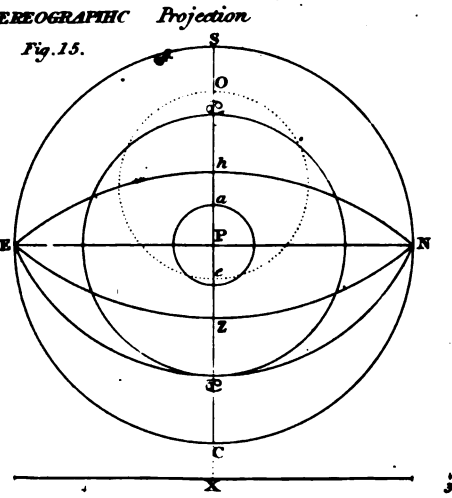
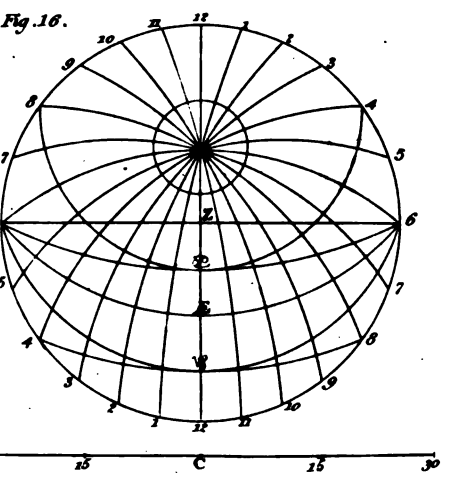


Fig. 16.



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SUBCONTRARY
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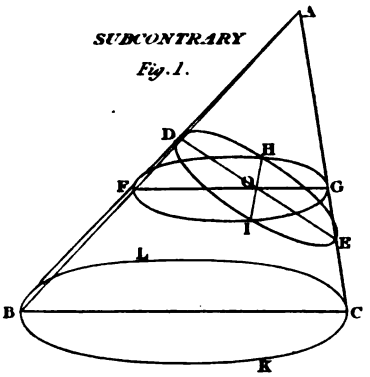
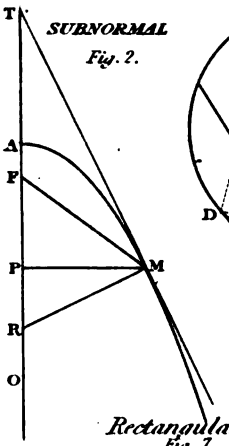
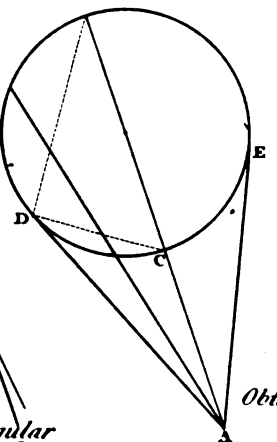


SUBNORMAL
Fig. 2.

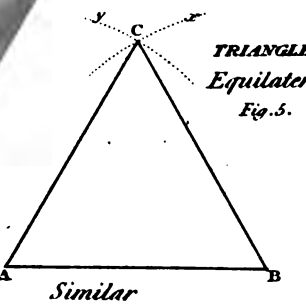


TANGENT
Fig. 3.

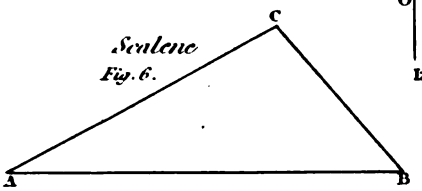


TETRAEDRON
Fig. 4.

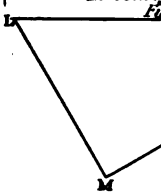
TRIANGLE
Equilateral
Fig. 5.



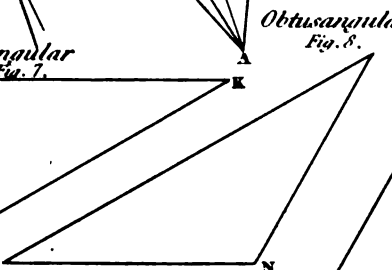
Scalene
Fig. 6.



Rectangular
Fig. 7.



Obtusangular
Fig. 8.



Similar
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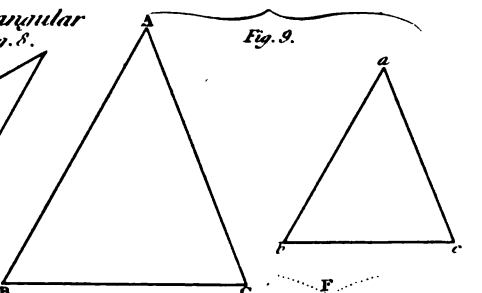
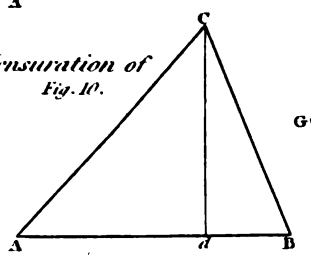


Mensuration of
Fig. 10.



Properties of
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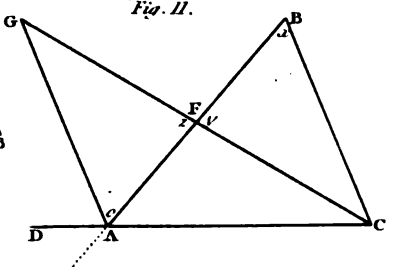
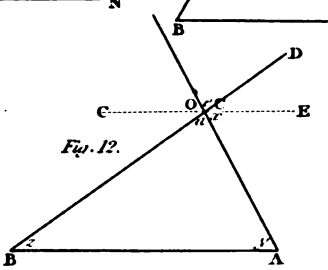
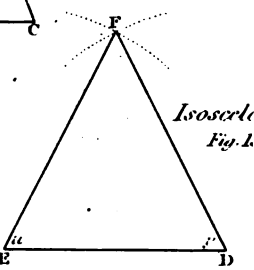


Fig. 12.



Isosceles
Fig. 13.



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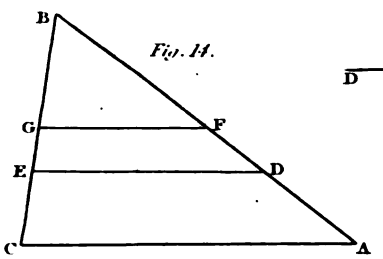
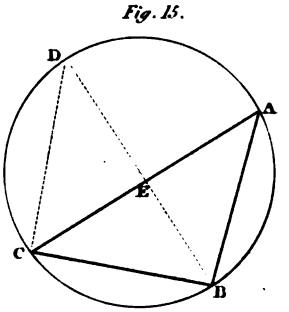
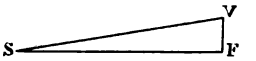


Fig. 15.





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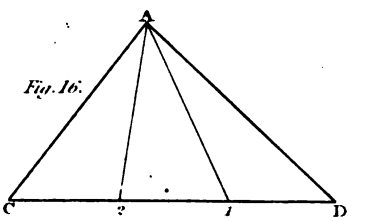


VERTEX
Fig. 18.

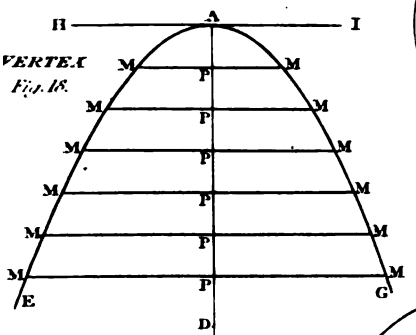
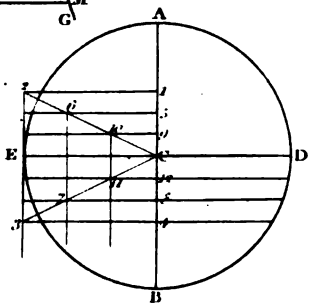


Fig. 21.



Goldman's
VOLUTE
Fig. 20.

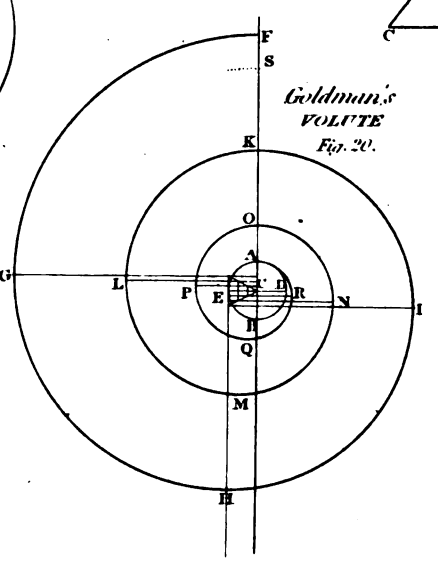
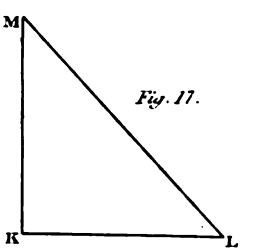
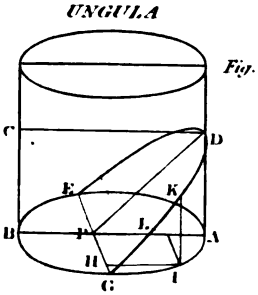


Fig. 17.



UNGULA
Fig. 19.



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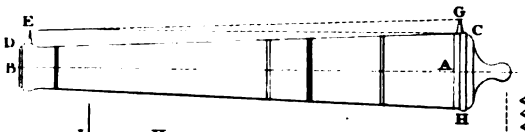
GUNNERY.

Fig. 1. Pointing of a GUN



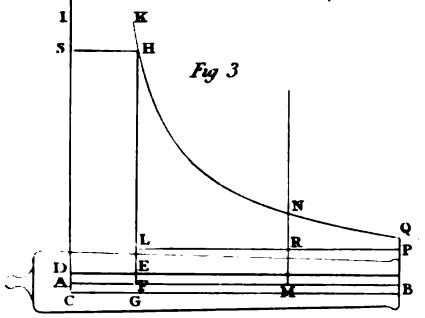
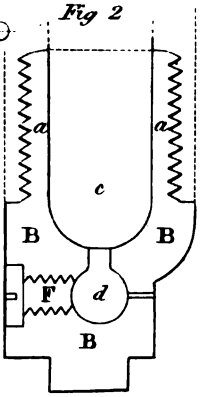
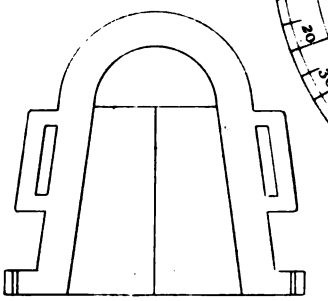


Fig 3

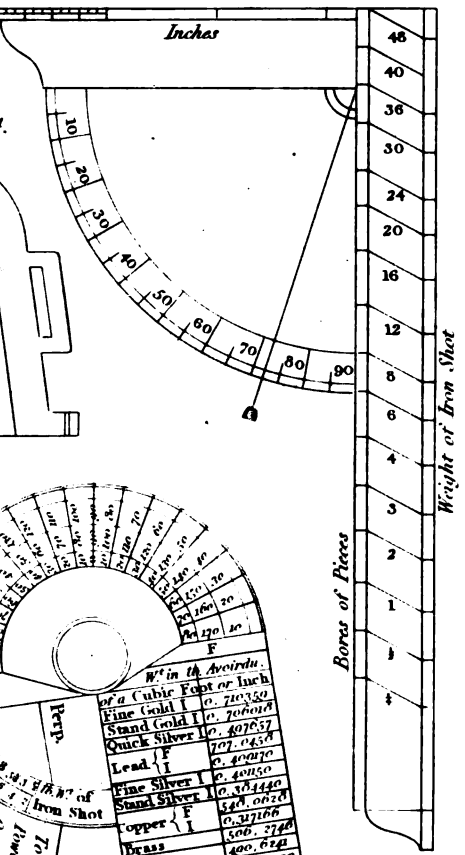
Fig 2



PETARD Fig. 4.



QUADRANT Fig. 5.



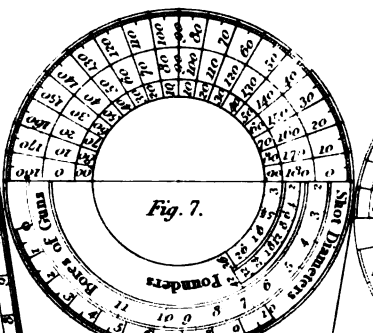
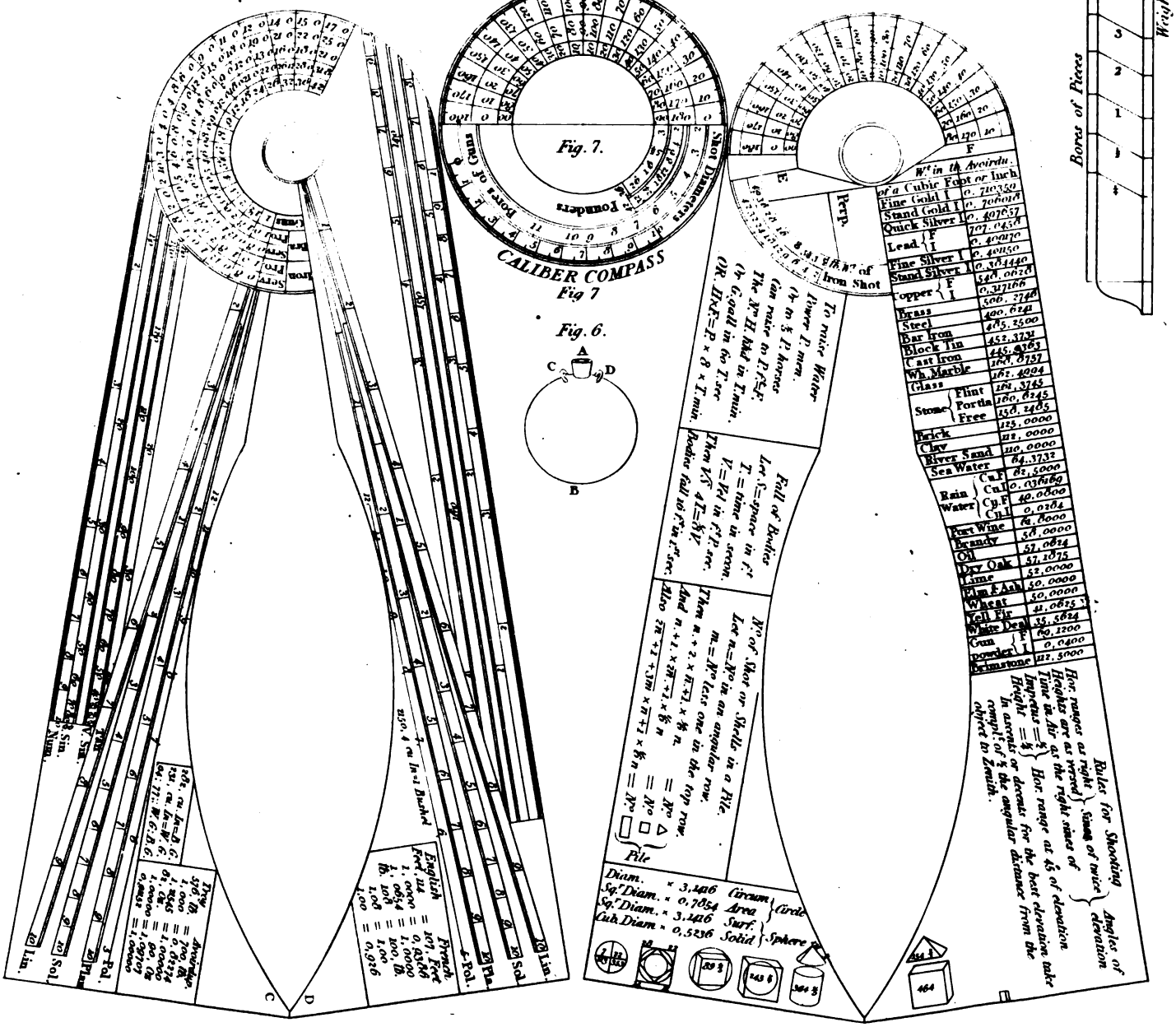


Fig. 7.

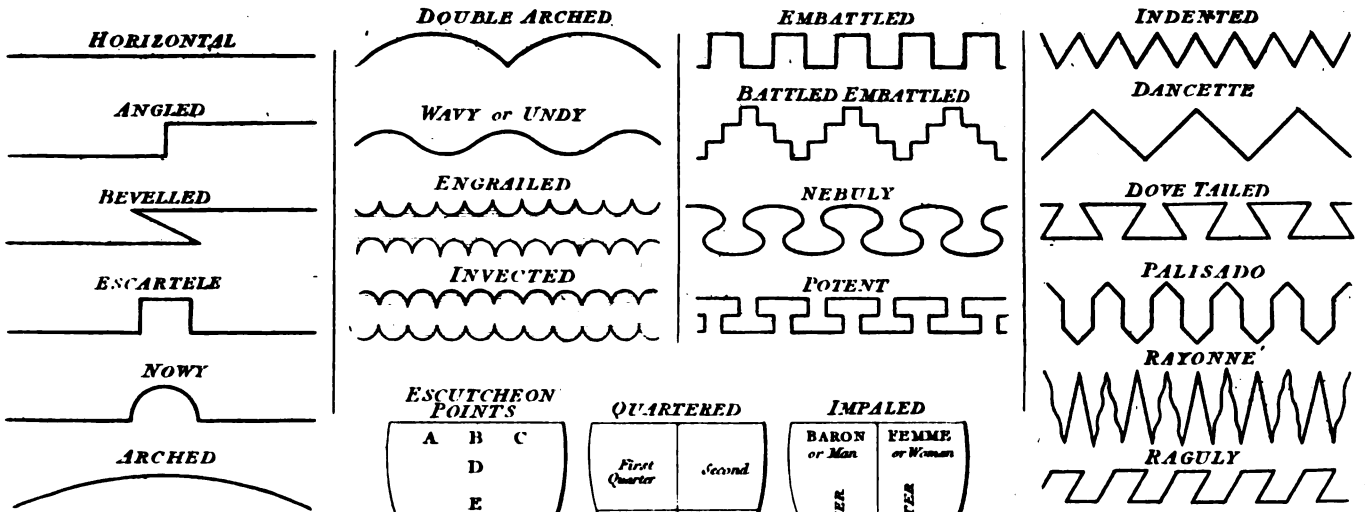
CALIBER COMPASS
Fig 7

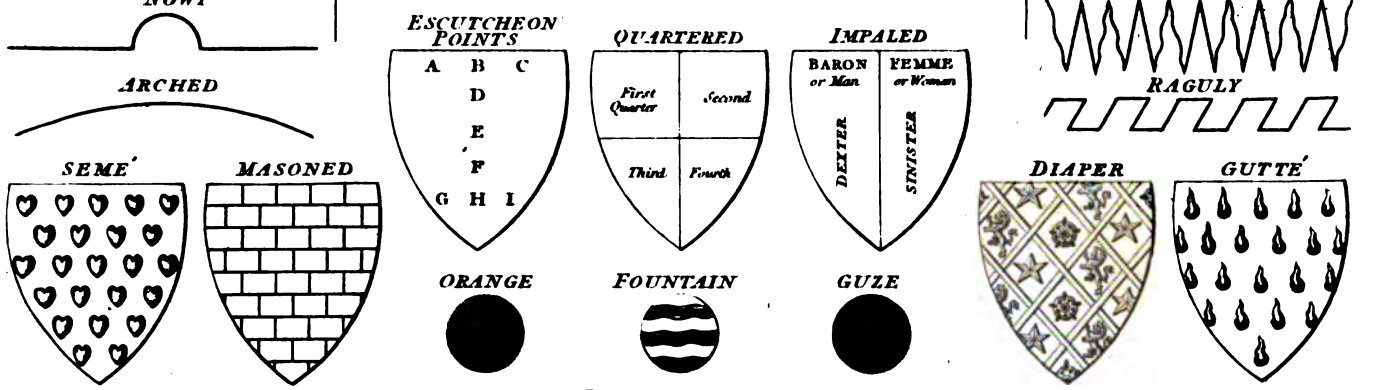
Fig. 6.



HERALDRY.

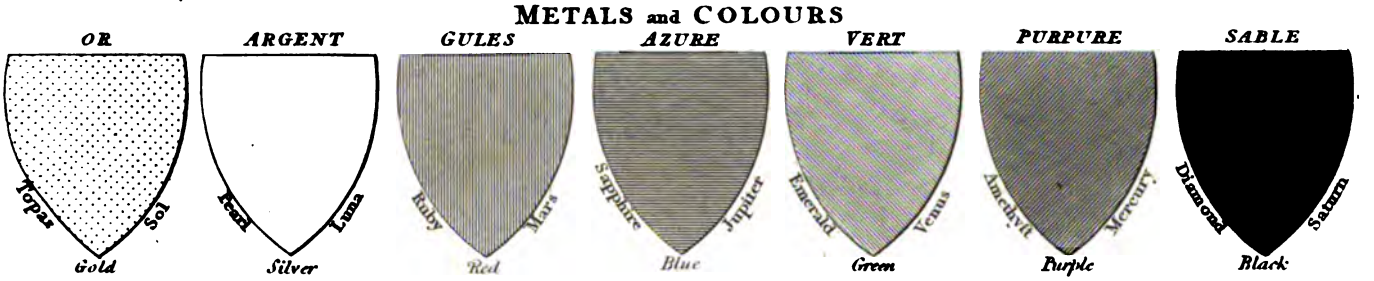
PARTITION LINES





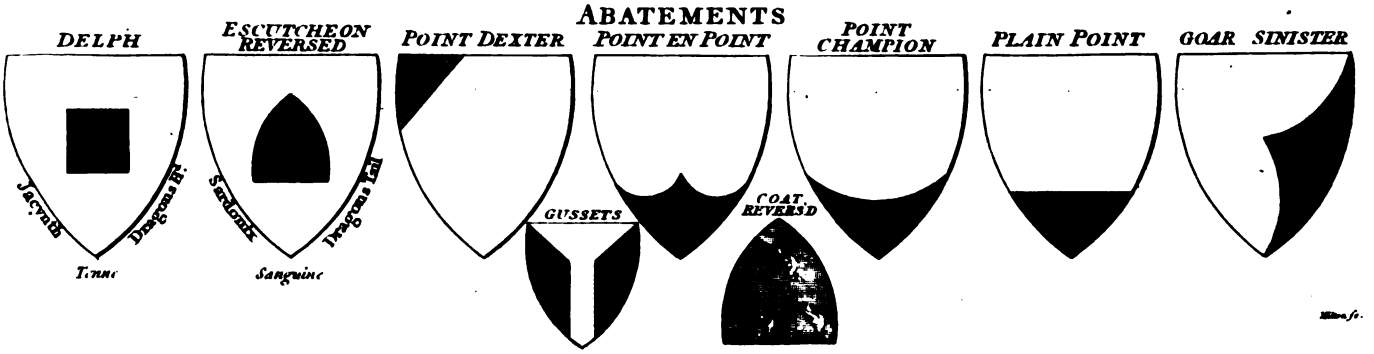
ROUNDLES

METALS and COLOURS



FURS

ABATEMENTS



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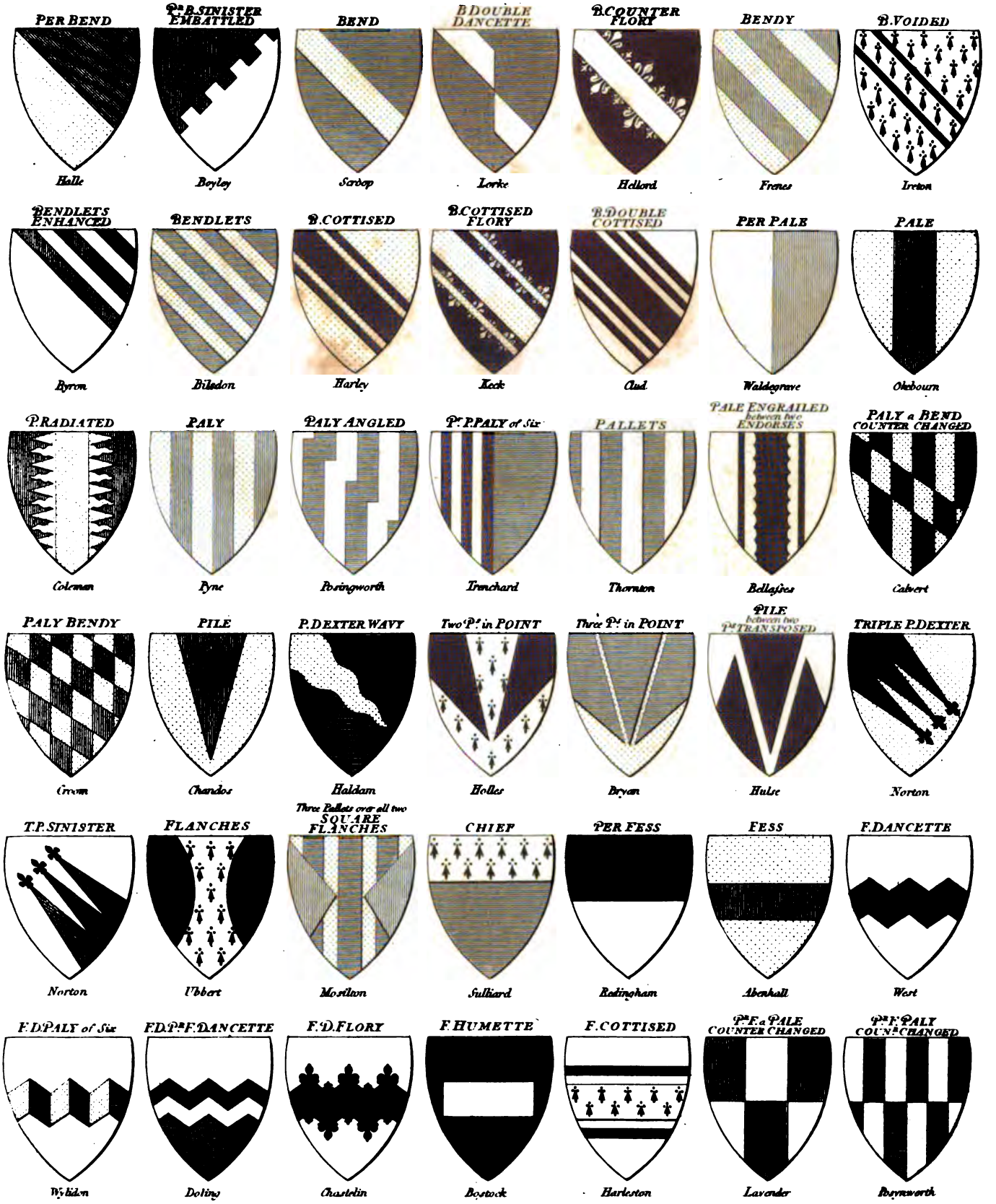
HERALDRY.



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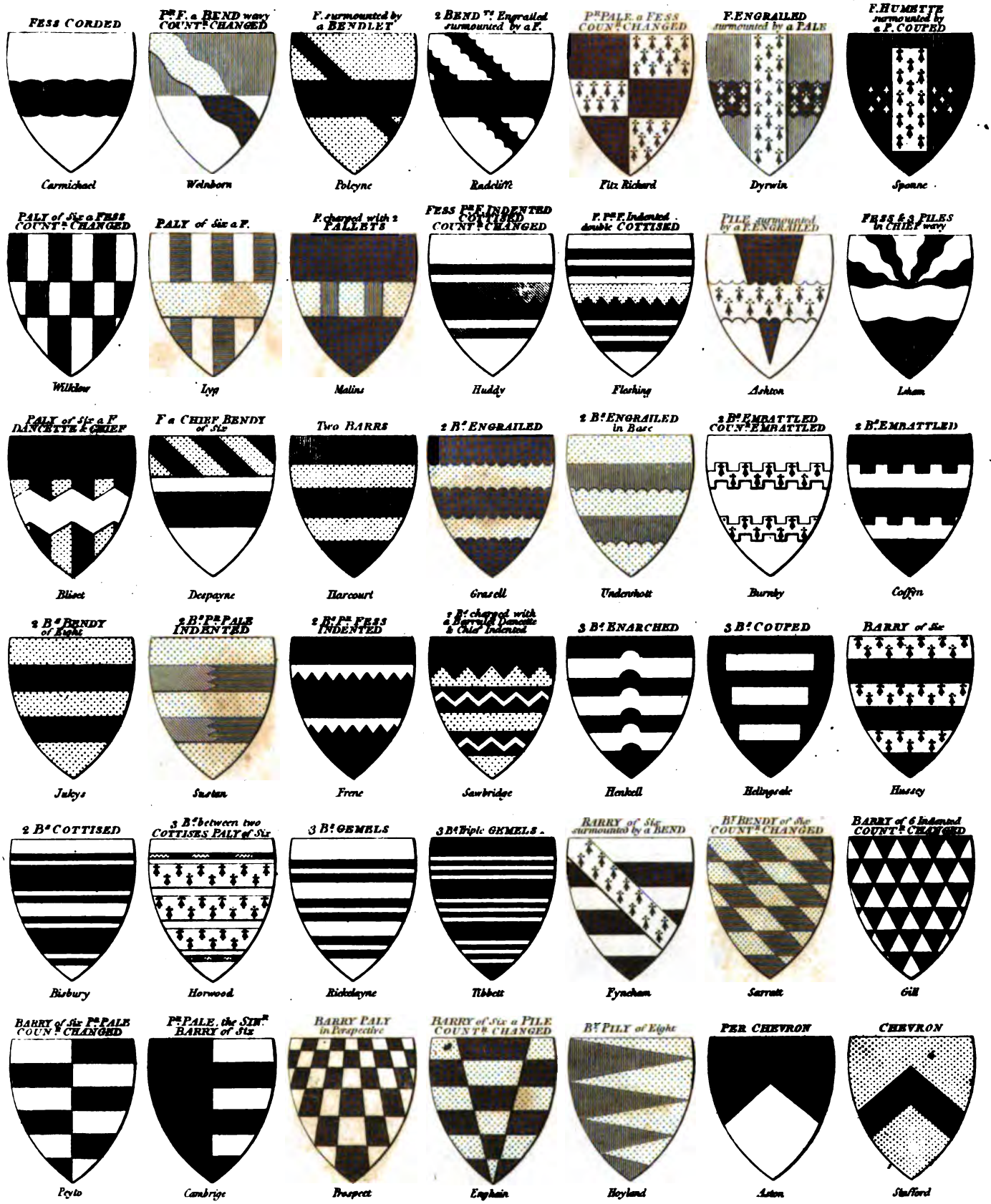
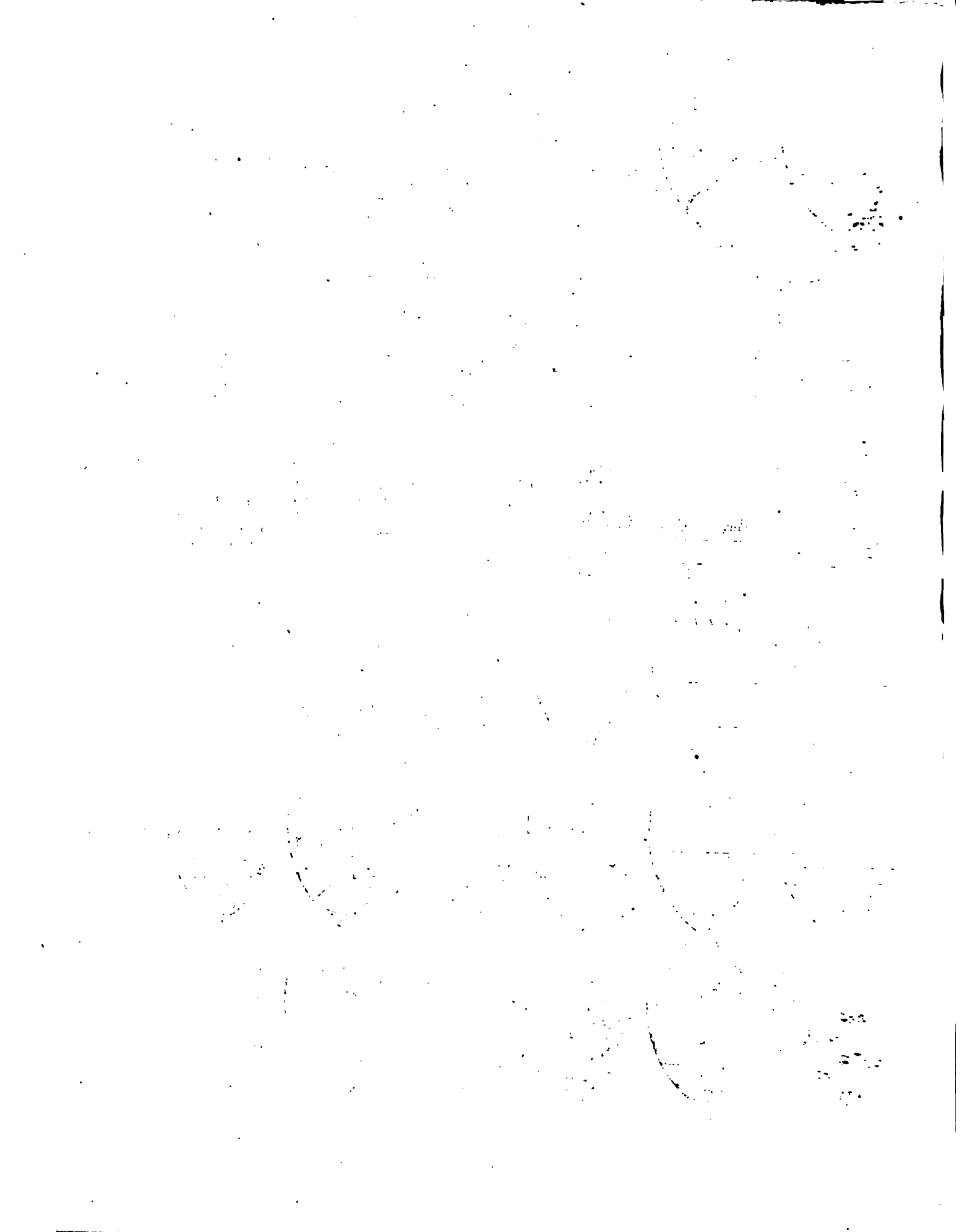
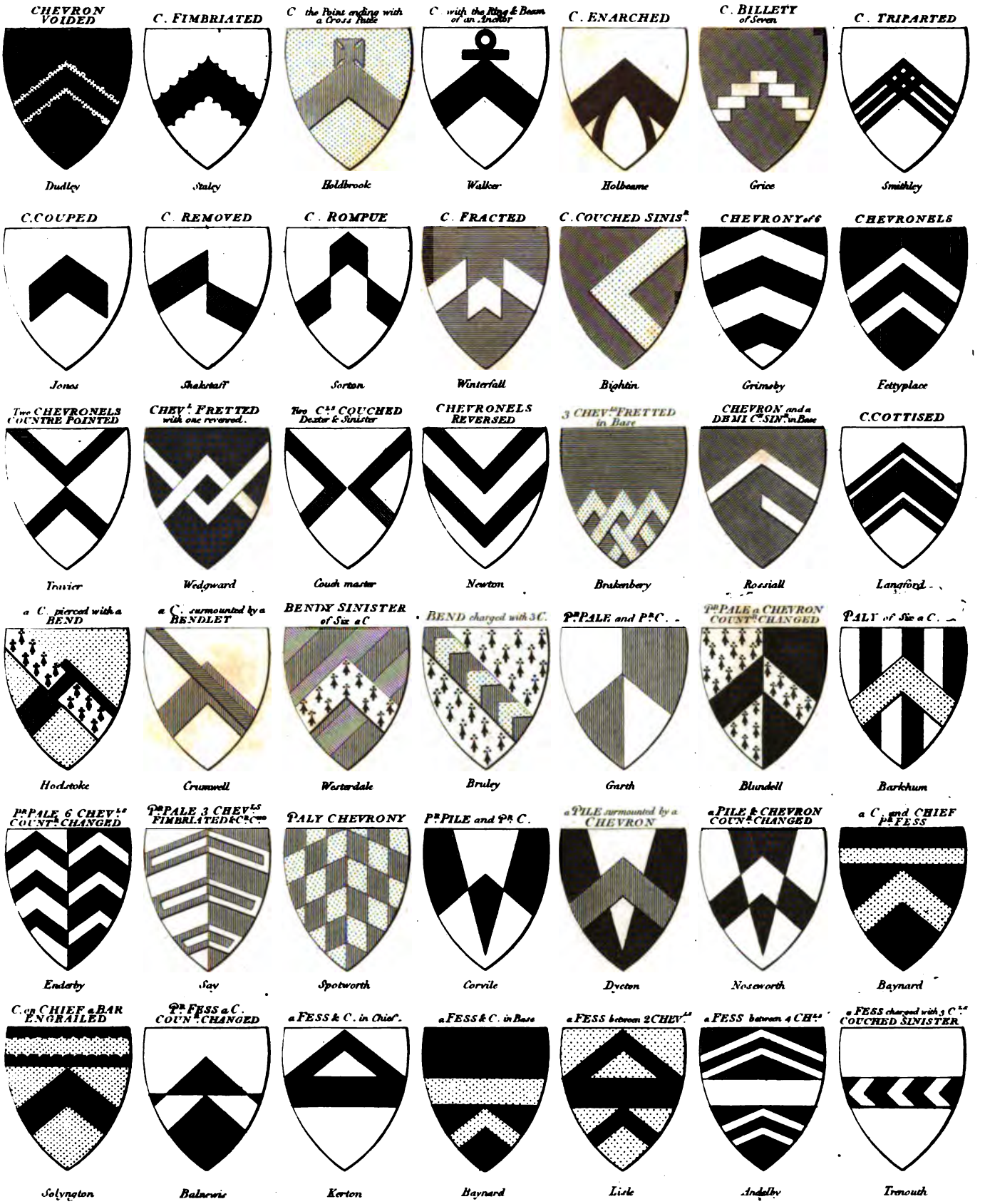


Published as the Act directs, Nov.1.1804, by Longman, Hurst, Rees & Orme Paternoster Row.



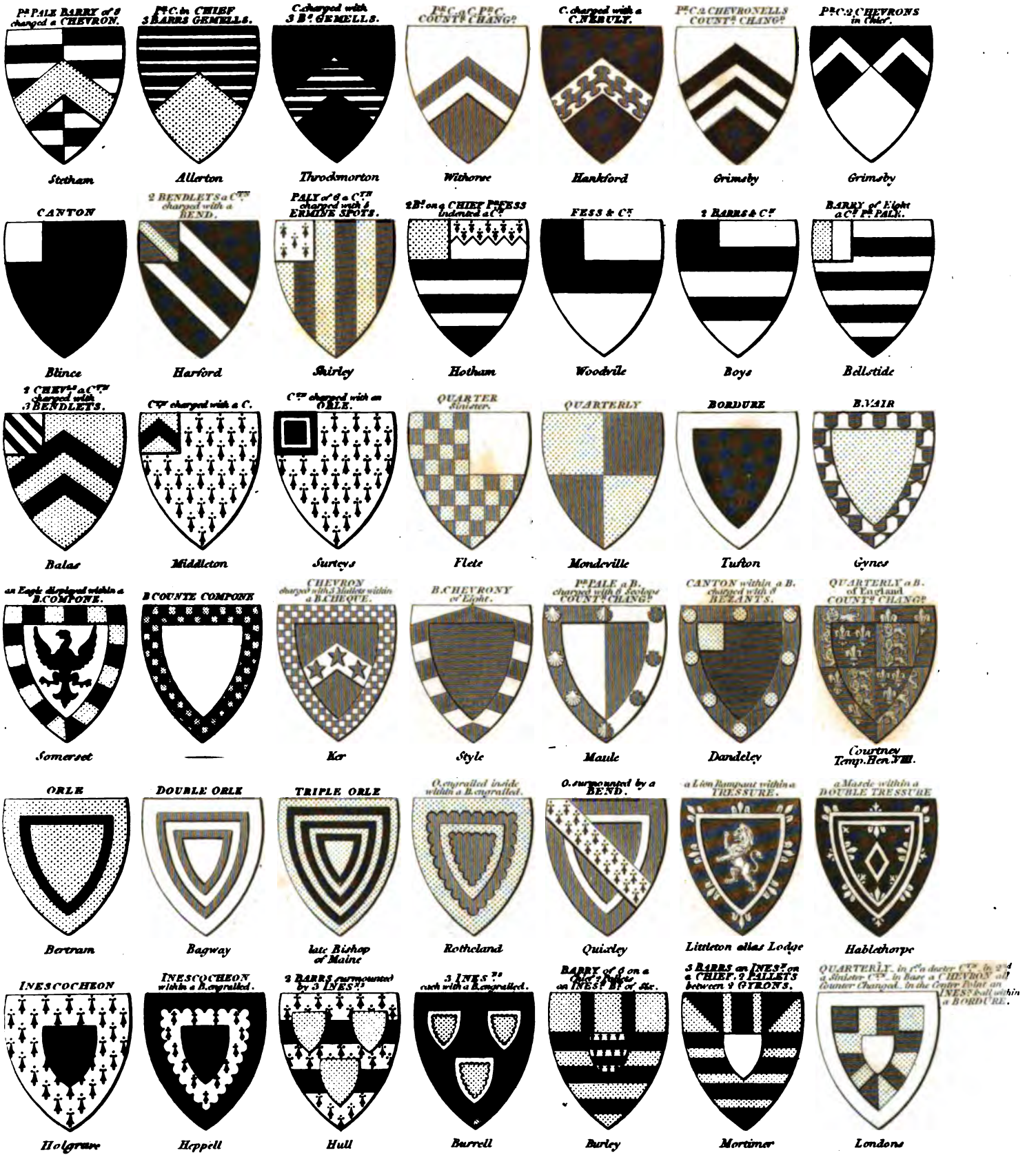
HERALDRY.



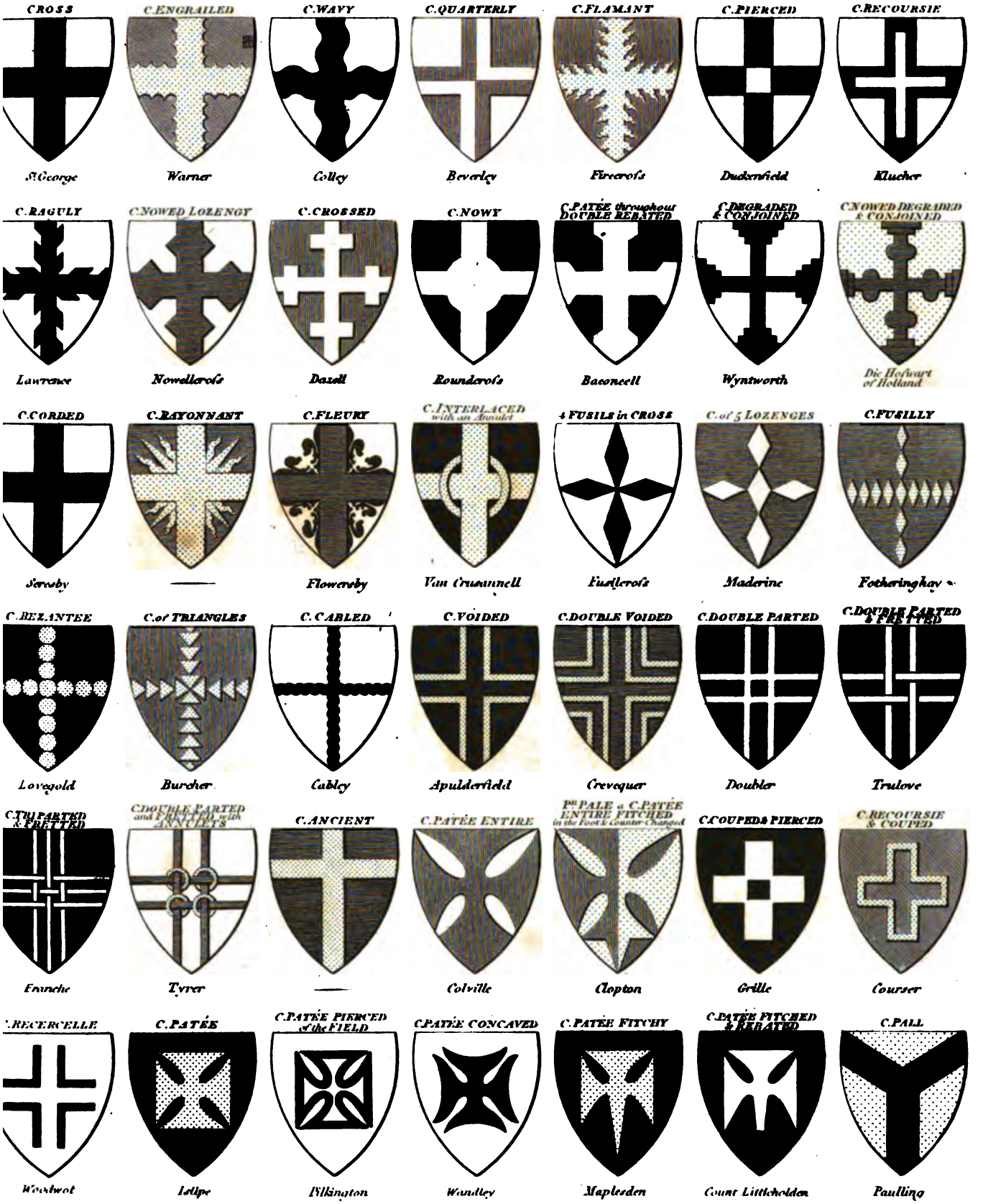
Published as the Act directs, June 1.1803, by Longman & Rees Paternoster Row.

Milton fc

HERALDRY.



Published as the Act directs. Sep.^t 1st 1808. by Longman Hurst Rees & Orme Paternoster Row.



Published as the Act directs Sept.r 1.1808 by Longman Hurst Rees & Orme Paternoster Row.

Milton Sculp.

MILITARY AND NAVAL

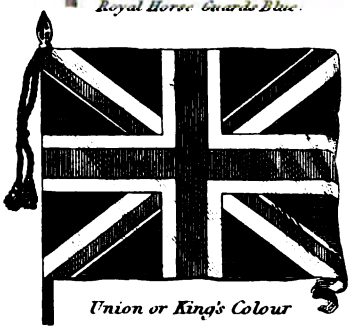
FLAGS, STANDARDS &c.

CAVALRY

Standard of the Royal Horse Guards Blue.

Guidon of the Royal Horse Guards Blue.

Camp Colour



Union or King's Colour

INFANTRY

Regimental Colour

Camp Colour

NAVAL

Royal Standard

Union Jack

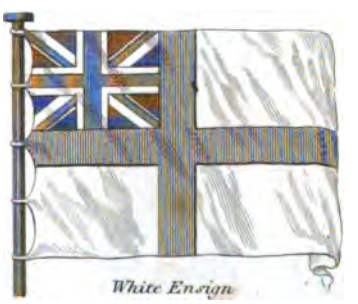
Admiralty

Navy Office

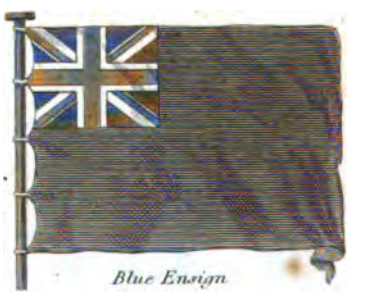
Victualling Office

Board of Ordnance

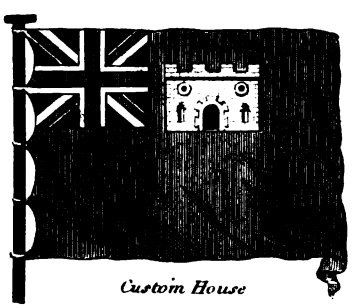
Red Ensign



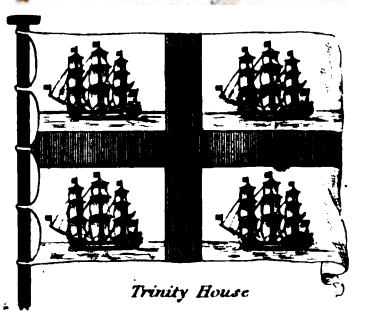
White Ensign



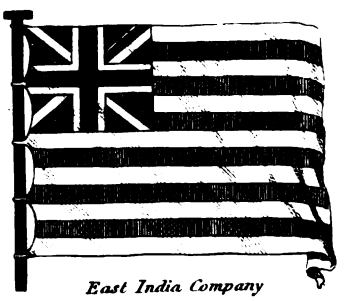
Blue Ensign



Custom House



Trinity House



East India Company

Published as the Act directs April 1.1819. by Longman, Hurst, Rees Orme & Brown, Paternoster Row.

Milton sculp

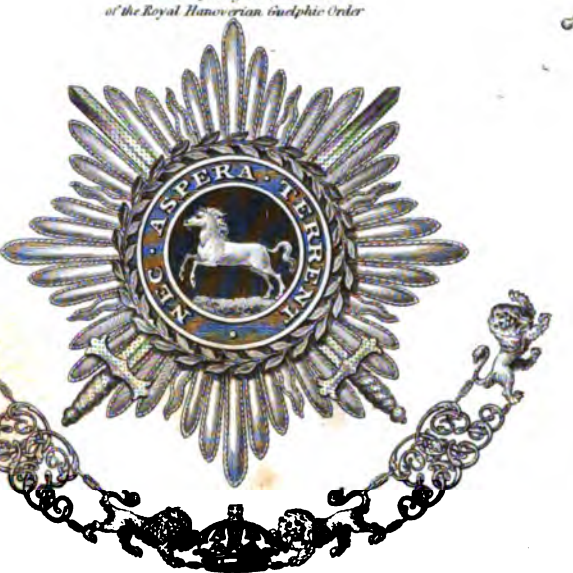
HERALDRY.

ORDERS of KNIGHTHOOD.

Star Collar and Badge of the Order of the GARTER

Badge of a Companion of the Order of the BATH.

Star Collar and Badge of a Military Knight Grand Cross of the Royal Hanoverian Guelphic Order



Star Collar and Badge of a Military Knight Grand Cross of the Order of the BATH.

Badge of a Military Commander of the Royal Hanoverian Guelphic Order.

Badge of a Knight Commander of the Order of the BATH.

Star, Collar and Badge of the Order of the THISTLE.

Badge of a Military Knight of the Royal Hanoverian Guelphic Order.

Star Collar and Badge of the Order of St. PATRICK.

Milton sculp.

Published as the Act directs August 1.1810. by Longman, Hurst, Rees, Orme & Brown Paternoster Row.

HERALDRY.

ORDERS OF KNIGHTHOOD.

Star Collar & Badge of a Civil Knight Grand Cross of the Order of the BATH.

Star Collar & Badge of a Civil Knight Grand Cross of the Royal Hanov.r GUELPHIC Order

Star of a Civil Commander of the Royal Hanoverian GUELPHIC Order

Ribband & Badge of a Civil Commander of the Royal Hanov.r GUELPHIC Order.

Reverse of the Ribband & Badge of the Royal Hanover.r GUELPHIC Order

Badge of a Civil Knight of the Royal Hanov.r GUELPHIC Order

Star of a Knight Commander of the Order of the BATH.

Star of a Military Commander of the Royal Hanover.r GUELPHIC Order.

Published as the Act directs Oct.r 1.st 1830 by Longman Hurst Rees Orme & Brown Paternoster Row.

HERALDRY.

CROWNS, CORONETS AND MITRES

Nephew of the King

Scotland

England

Hanover

Niece of the King

Younger Sons of the King

Prince of Wales.

Daughters of the King

Arch Bishop

Grand Daughters of the King

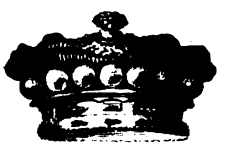
Prince Leopold of Saxe Coburg

Bishop

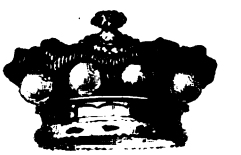
Duke

Marquess

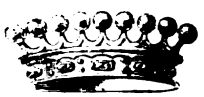
Earl



Viscount



Baron



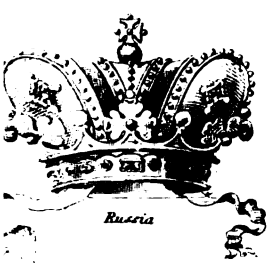
Count of Hanover

Hungary

Austria

Bohemia

Baron of Hanover



Russia

Count of the Empire

Prince of the Empire

Baron of Austria

France

Dauphin of France

French Prince of the Blood

Duke of France

Marquis of France

Charlemagne

Published as the Act directs Aug.st 1 1819, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.

Milton sculp.

HERALDRY.

CROWNS, CORONETS, MITRES, &c.

Comte of France

Prussia

Spain

Sweden

Vicomte of France

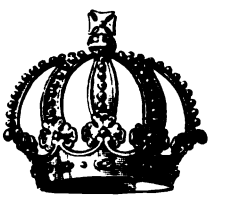
Duke of Spain

Sicily

Portugal

Netherlands

Denmark



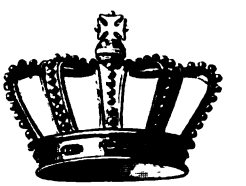
Wurttemburg

Bavaria

Grand Signior

Papal Tiara

Persia



Saxony

Sardinia

Hayti

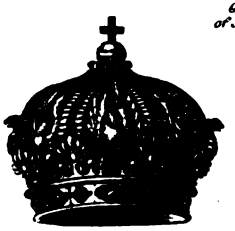
Cardinals Hat

Grand Duke of Hesse

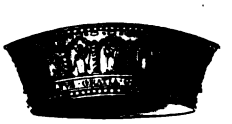
Poland

Grand Duke of Saxe Weimar

Landgrave of Hesse



Imperial Crown worn by Napoleon Buonaparte



Italy

Doge of Venice

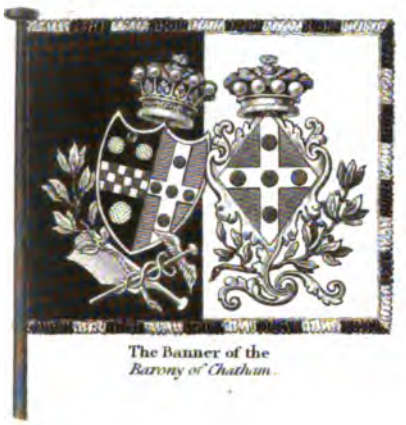
Grand Duke of Tuscany

Lord Mayor of London

Published as the Act directs Jan.ʳʸ 1820 by Longman Hurst Rees. Orme & Brown Paternoster Row.

Achievements borne at the Interment of the Rt Hon.ble Wm Pitt Earl of Chatham *& Viscount Pitt. solemnized in Westminster Abbey at the Public Expence, on Tuesday June 9th 1778.*

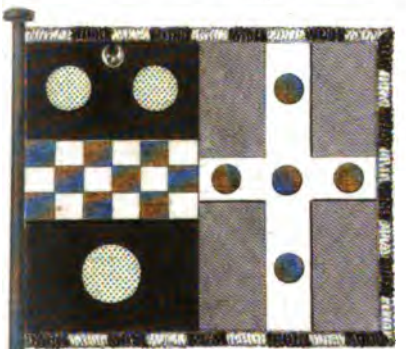
The Standard



The Banner of the *Barony of Chatham.*

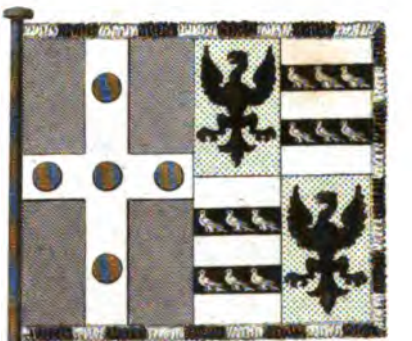
Targe & Sword

The Great Banner.



Banner of the Arms of *Pitt and Grenville.*

The Coronet *on a black Velvet Cushion*



Banner of the Arms of *Grenville and Temple.*

Helmet & Crest

Banner of the Crest *of Pitt with Emblems.*

Surcoat

Banner of the Arms *of Pitt with Emblems.*

Published as the Act directs. April 1st 1819. by Longman. Hurst. Rees. Orme & Brown. Paternoster Row.

Milton sculp.

HERALDRY.

Funeral *Achievements*

Bachelor

Lamb

Peer

Earl of Waldegrave K.G.
Wife surviving

Spinster

Egerton

Husband

Beaumont & Evelyn
Wife surviving

Arch Bishop

Lord Rokeby
ARCH BISHOP of ARMAGH

Wife

Beaumont & Evelyn
Husband surviving

Husband & Wife

James & Aucher
both dead

Bishop

Harley
BISHOP of HEREFORD
& Vaughan his Wife surviving.

Widow

Raper & Porter

Published as the Act directs Dec. 1 1808. by Longman. Hurst. Rees. Orme & Brown Paternoster Row.

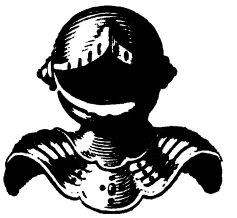
Milton sculp.

HERALDRY.

Heraldic Crowns Coronets and Helmets.

Nobility

King of Arms

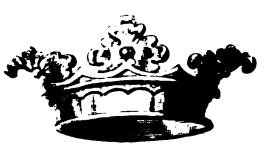


Baronet & Knight

Ancient Barons Cap
worn previous to 1661.

Eſquire

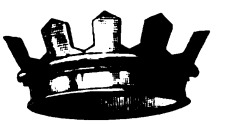
Helmet, Creſt *and* Mantling *or* Lambrequin
of the
BRITISH SOVEREIGN.



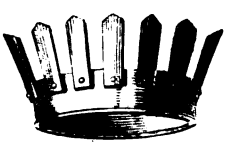
Ducal

Mural

Naval

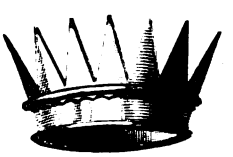


Vallarie



Paliſado
or Caſtrenſial.

Civic



Eaſtern

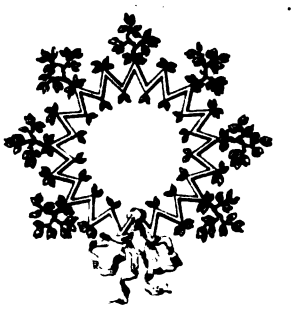
Chapeau
or Cap of Maintenance.

Celeſtial

Chaplet
or Garland

Wreath

Laureate



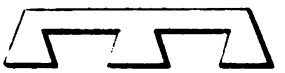
Obſidional

Olive

Trigonal

Published as the Act directs May 1.1803. by Longman & Rees Paternoster Row.

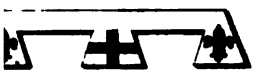
ROYAL DISTINCTIONS



Prince of Wales

Duke of York

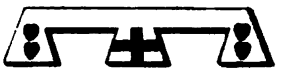
Duke of Clarence



Duke of Kent

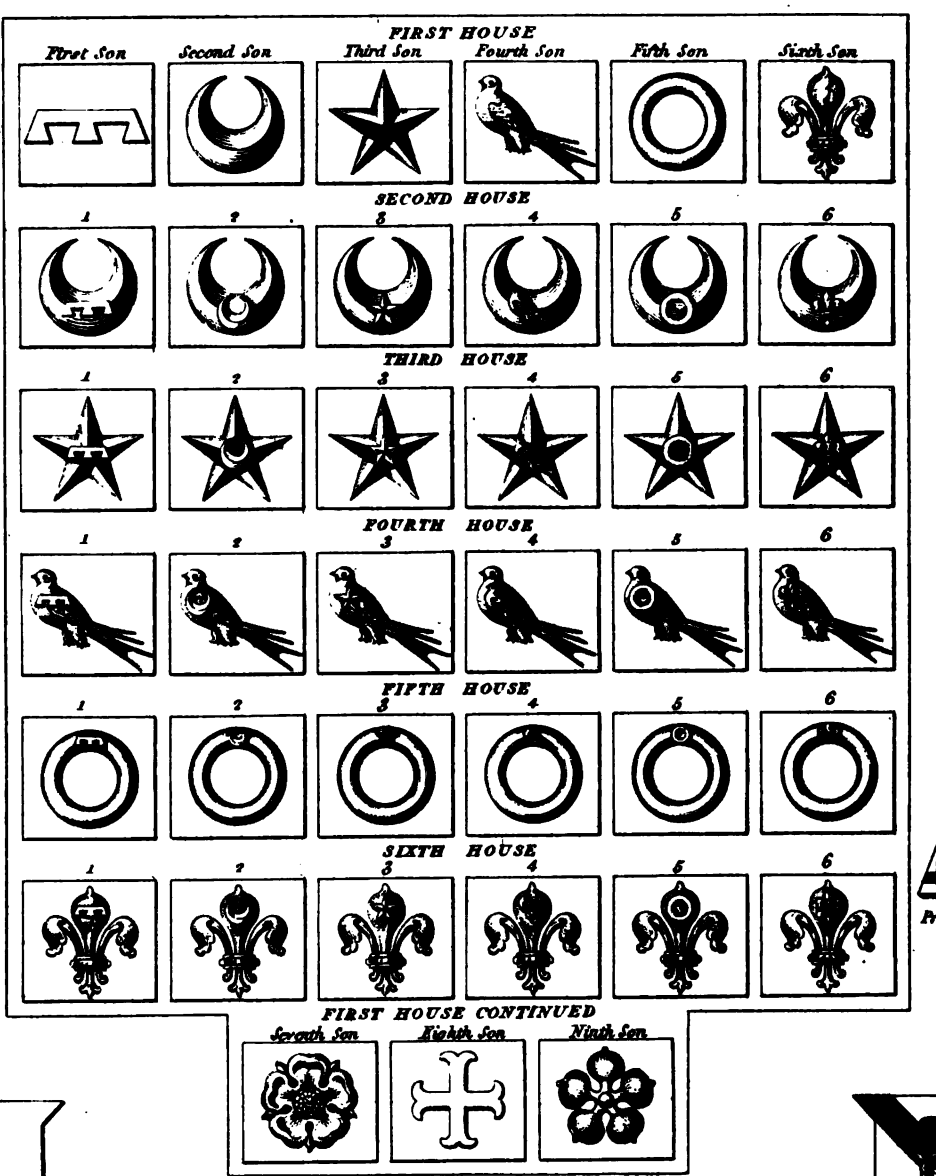
Duke of Cumberland

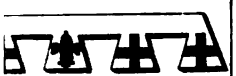
Duke of Sussex



Duke of Cambridge

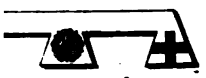
DISTINCTIONS OF HOUSES





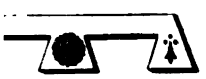
ike of Gloucester

Princess Mary



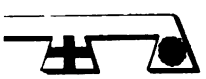
Princess Royal
otte Augusta Matilda

Princess Sophia

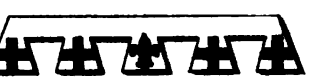


ess Augusta Sophia

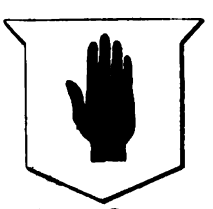
Princess Amelia



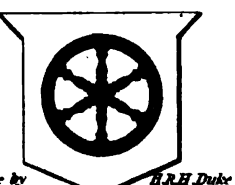
ncess Elizabeth



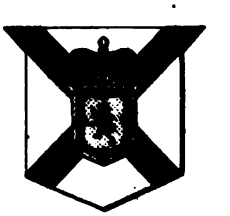
Princess Sophia Matilda of Gloucester



Badge of Baronets
of England & Ireland.



Badge borne by H.R.H. Duke of York
as Bishop of Osnaburgh.



Badge of Baronets
of Nova Scotia.

Milton del.

ANCIENT CLEPSYDRÆ.

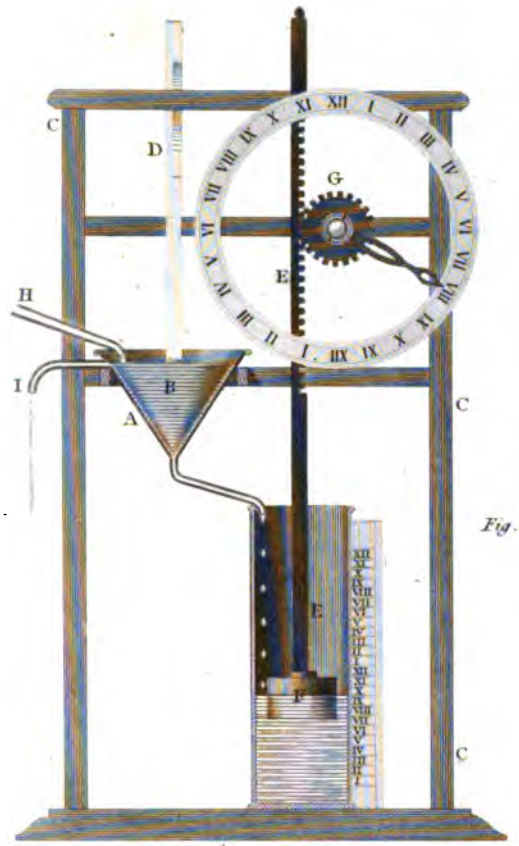


Fig. 1.

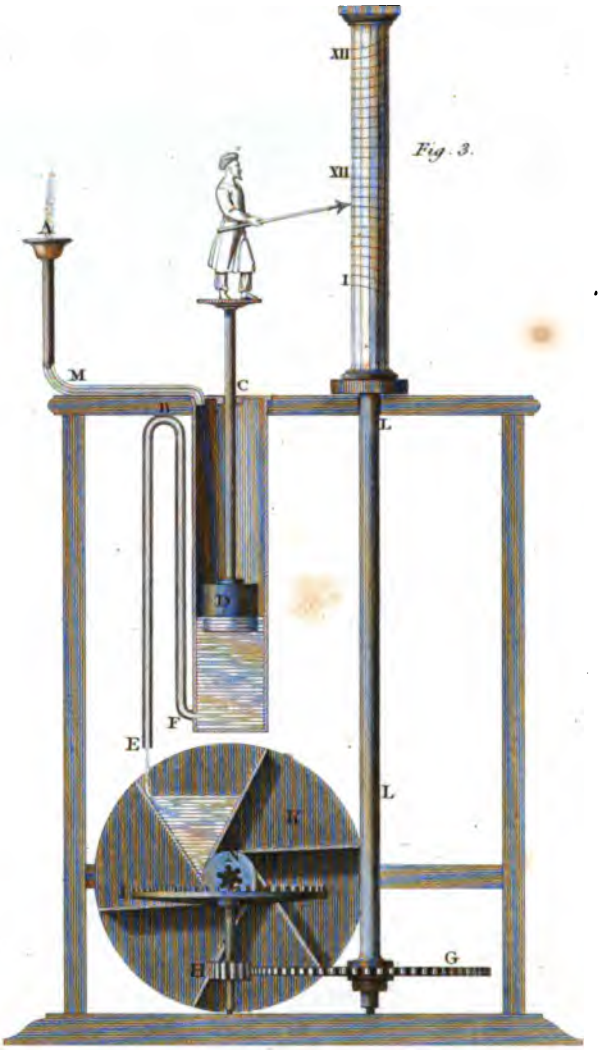


Fig. 3.

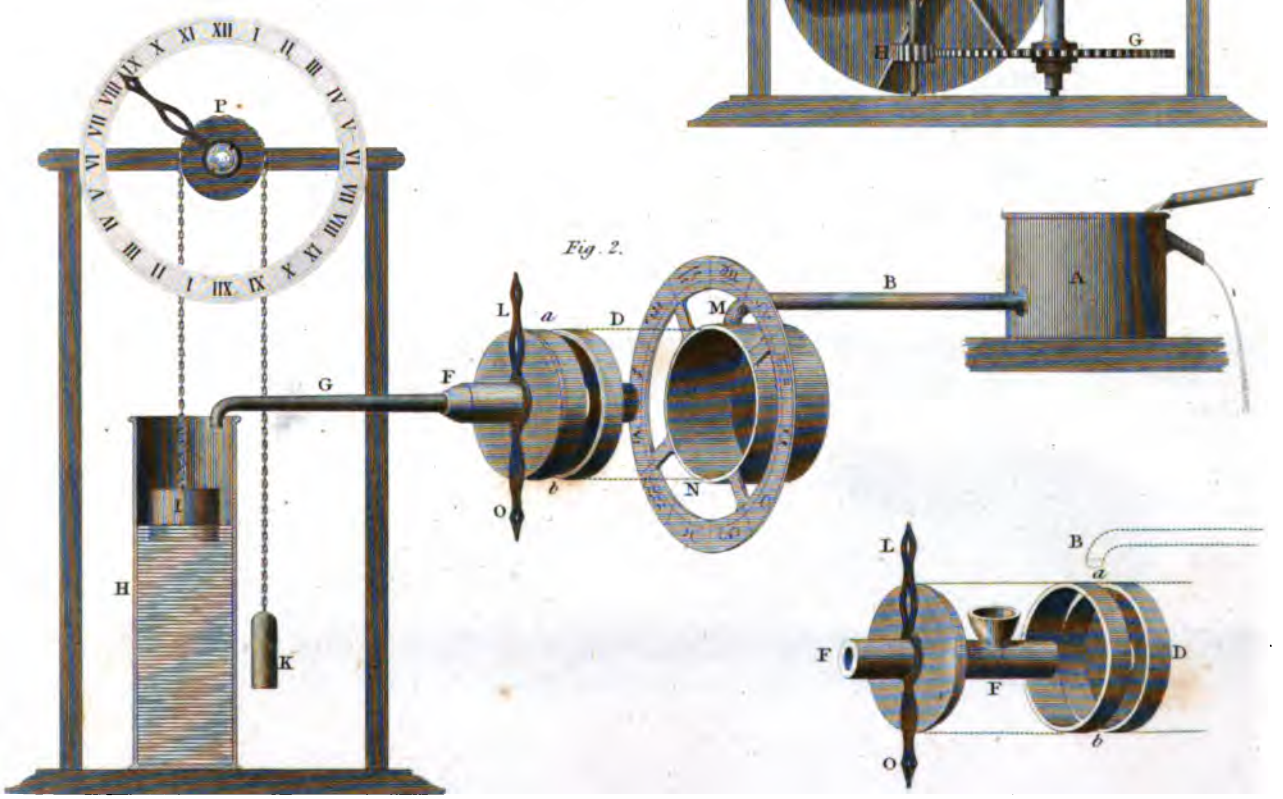


Fig. 2.

Published as the Act directs, 1819, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.

Lowry, Sc.

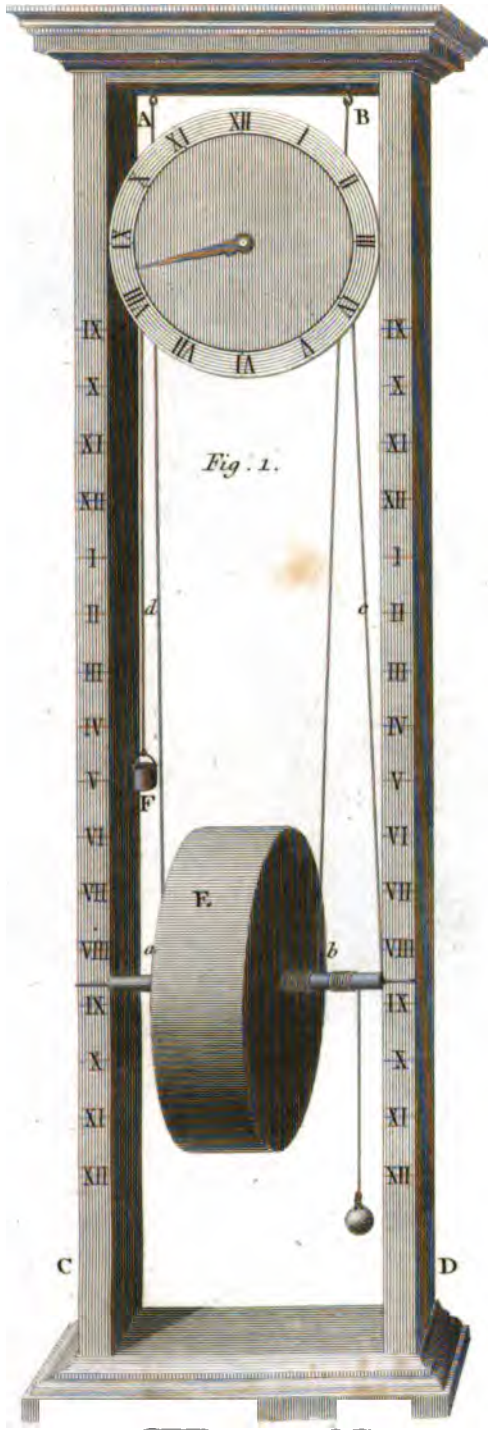
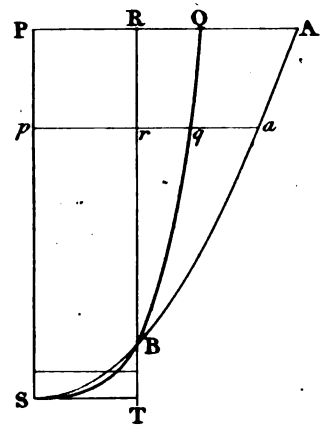


Fig. 1.

Fig. 4.



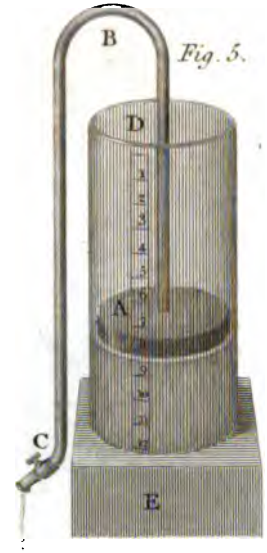
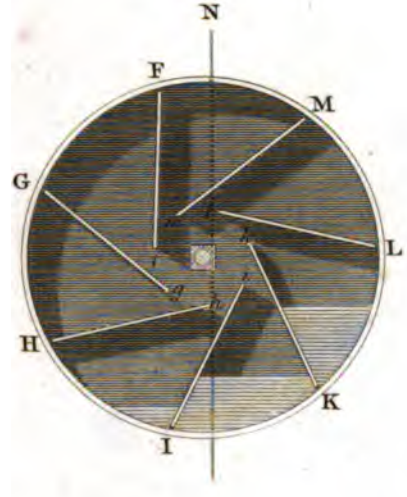


Fig. 5.

Fig. 2.



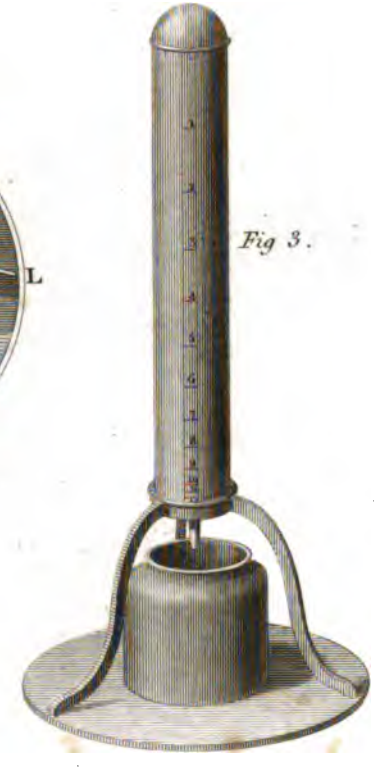


Fig 3.

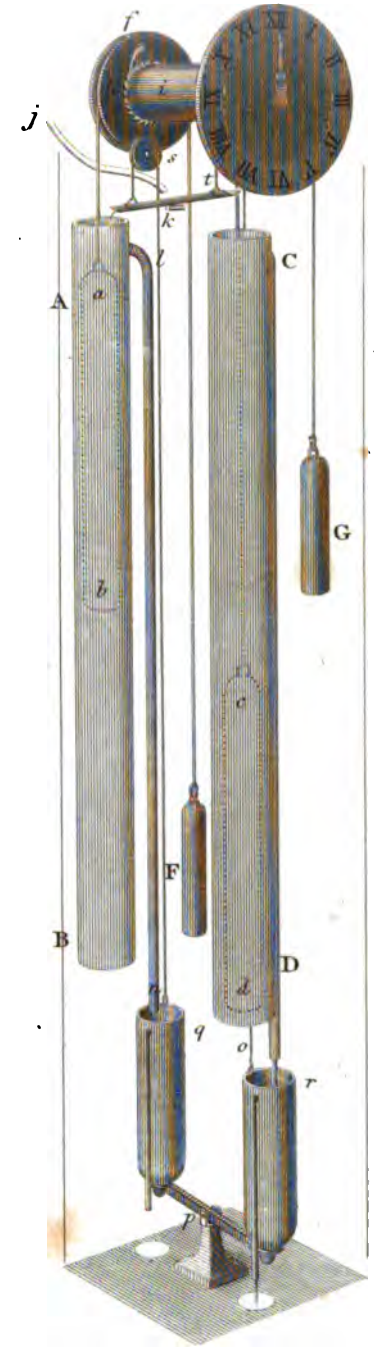
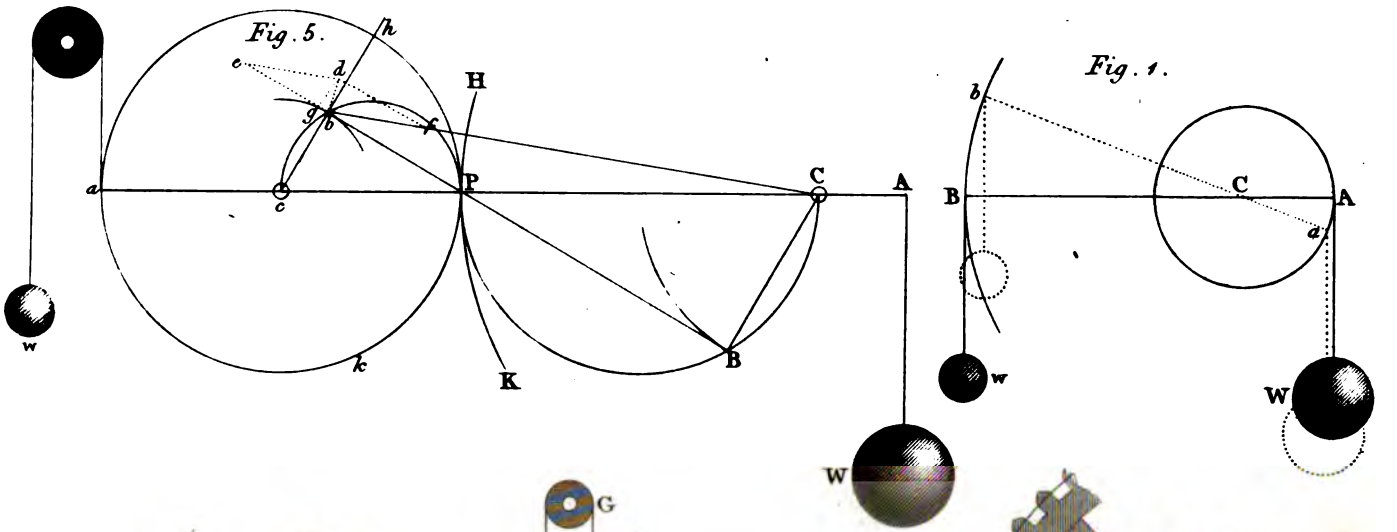
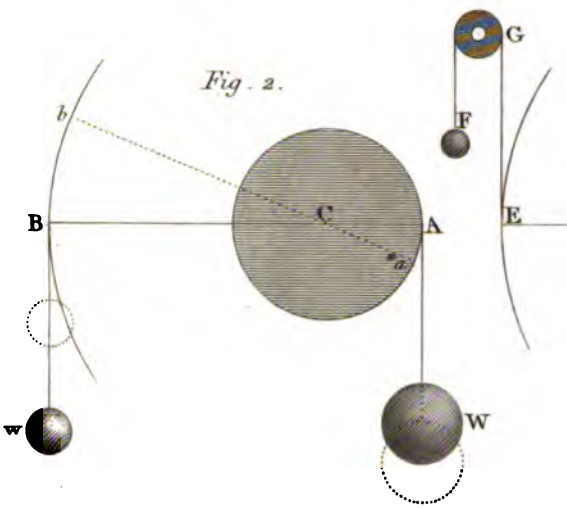


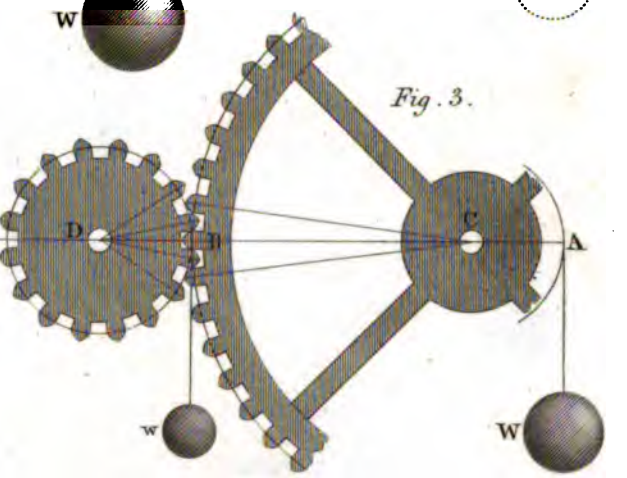
Fig. 6.

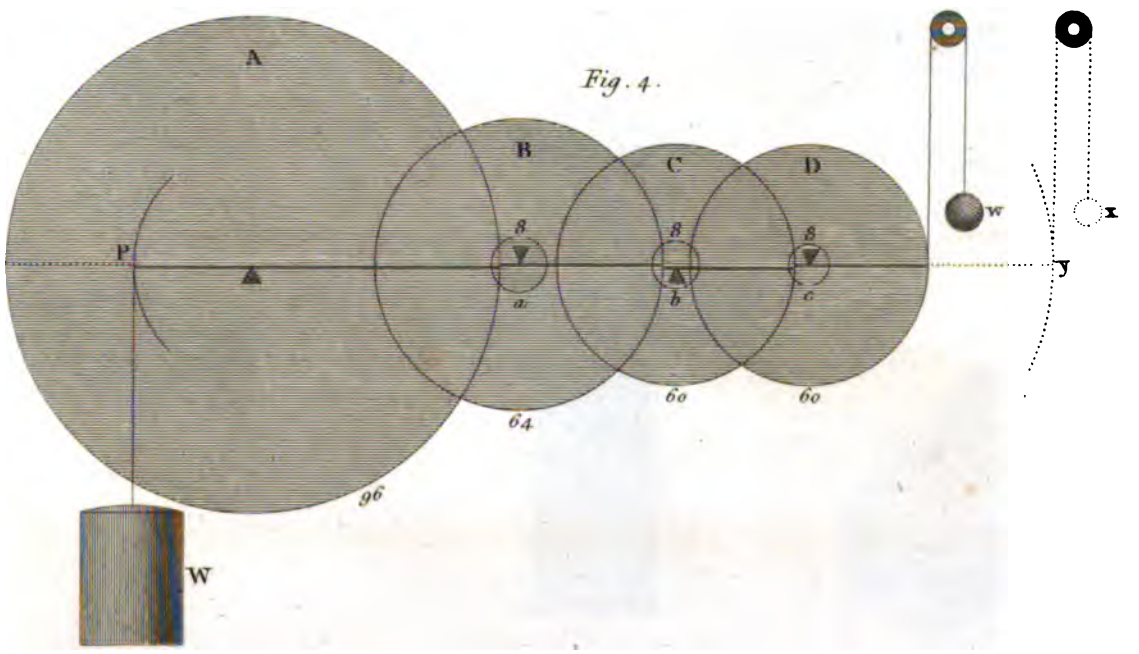
HOROLOGY.

CLOCK-MOVEMENT.









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Engraved by Wilson Lowry.

HOROLOGY.

CLOCK-MOVEMENT.

Fig. 7.

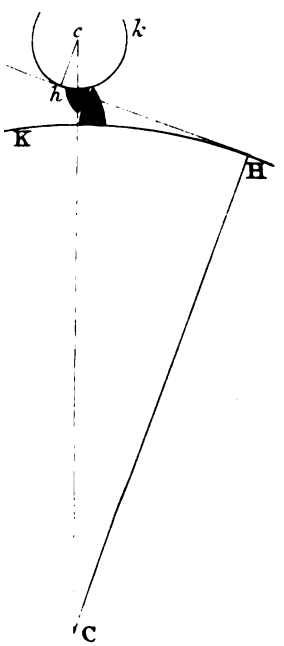


Fig. 1.

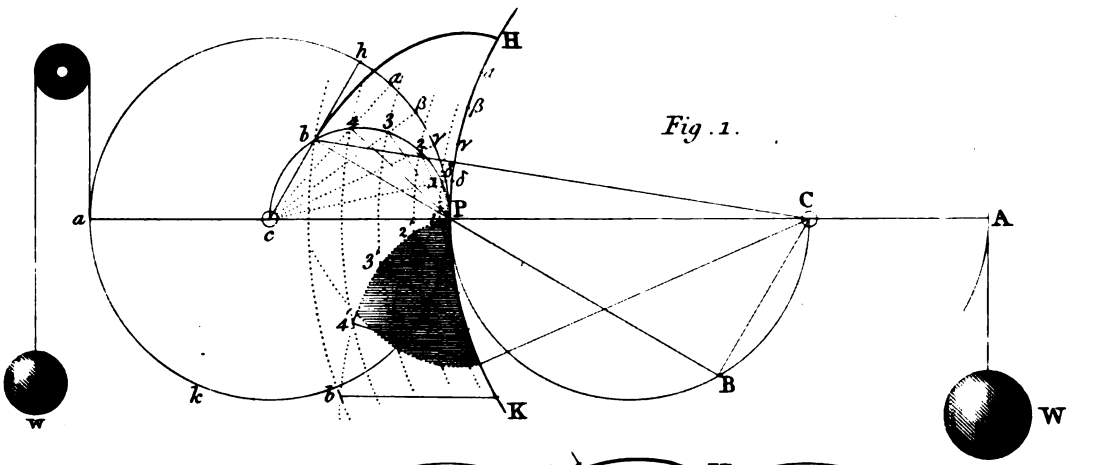


Fig. 2.

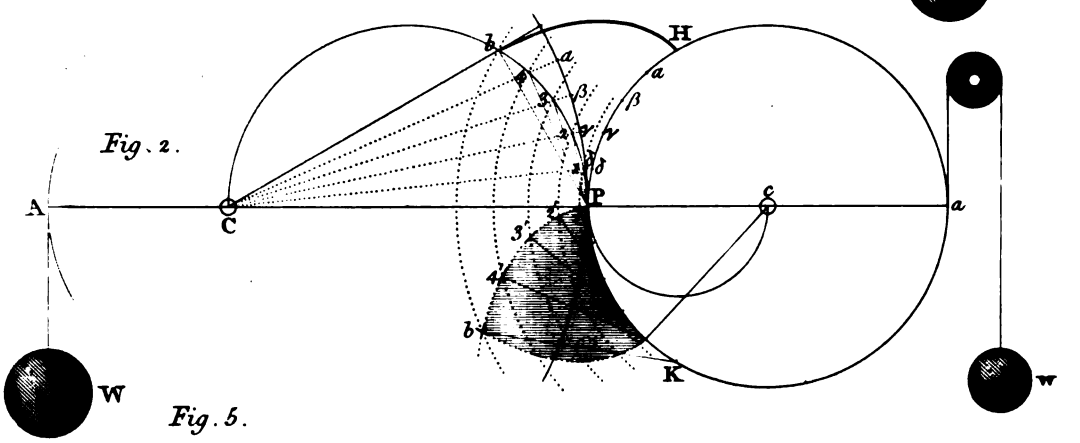
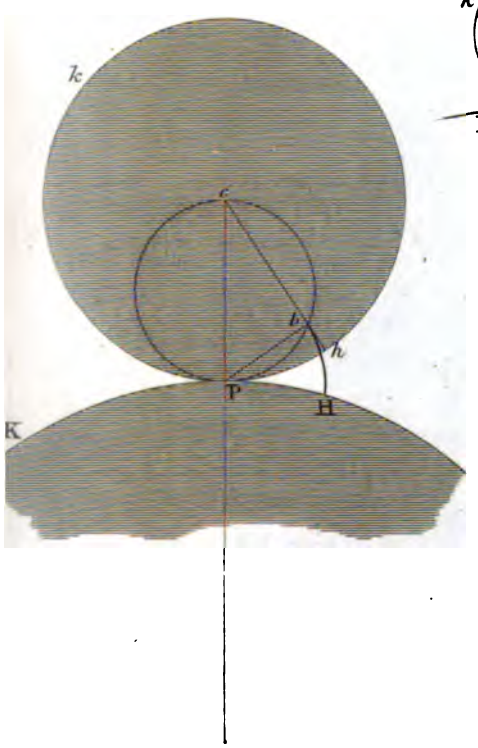


Fig. 5.

Fig. 4.



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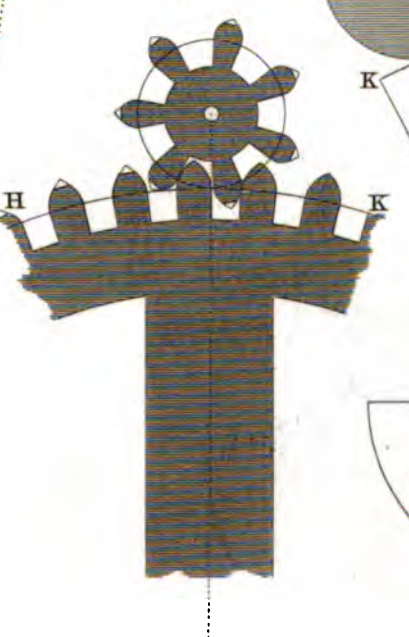
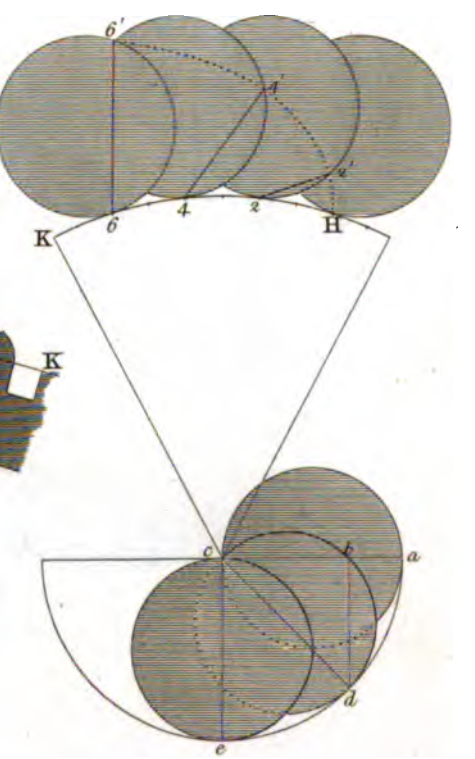


Fig. 3.



Published as the Act directs. June 2. 1806. by Longman, Hurst Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

Chime Work in the Clock Room of St. Margaret's Church, Westminster.

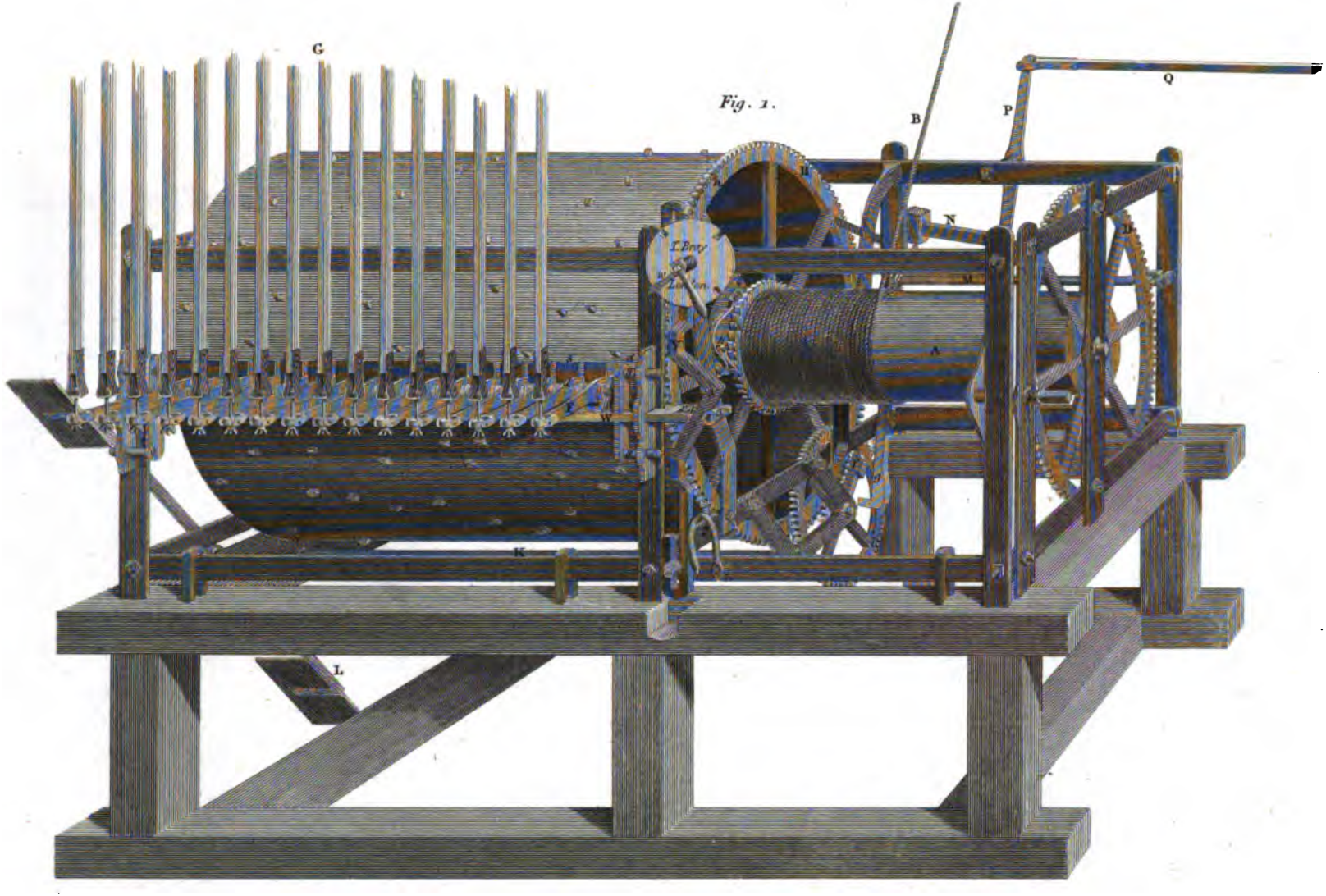


Fig. 2.

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Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

Chime Work in the Clock Room of St. Margarets Church, Westminster.

Fig. 3.

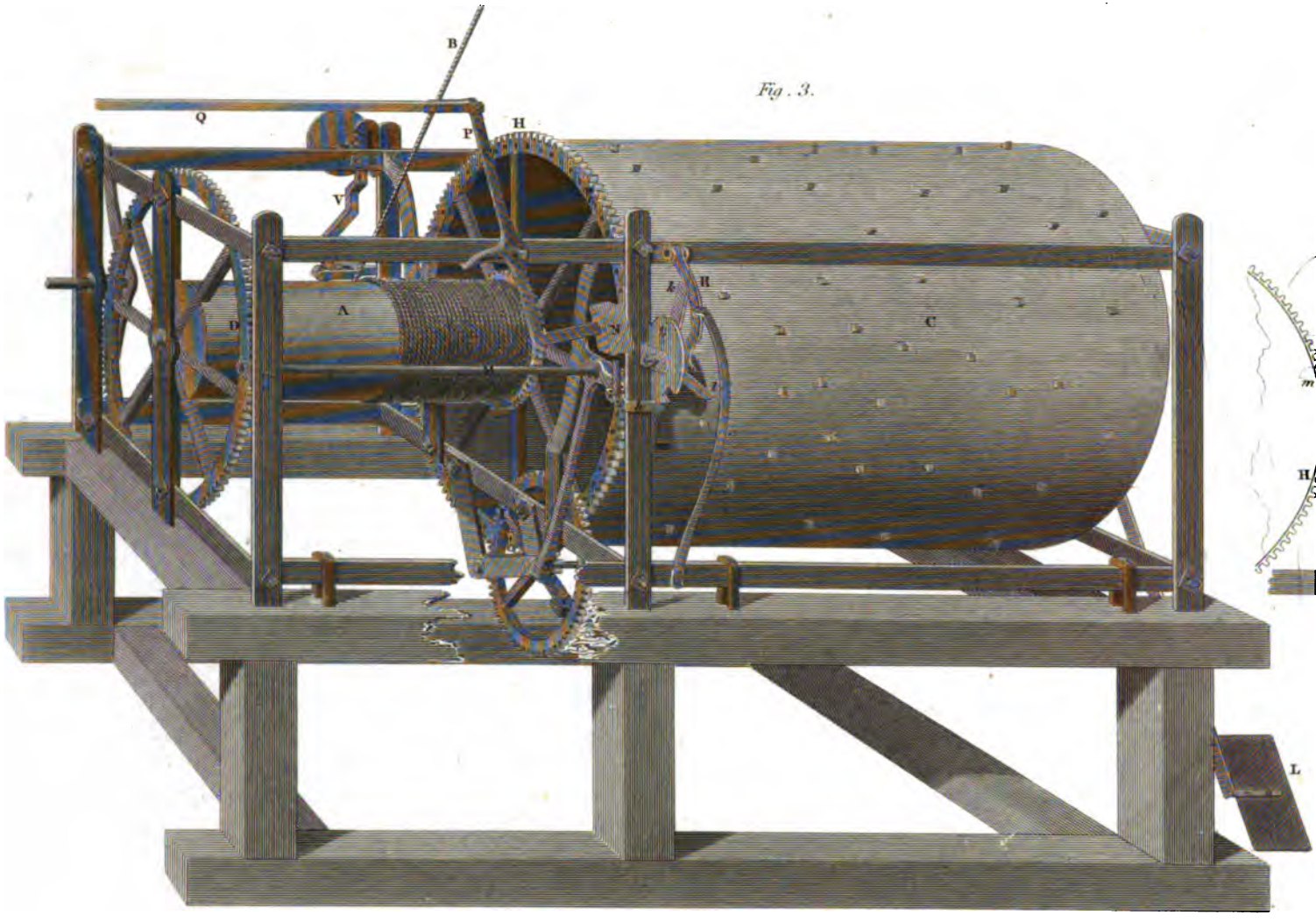
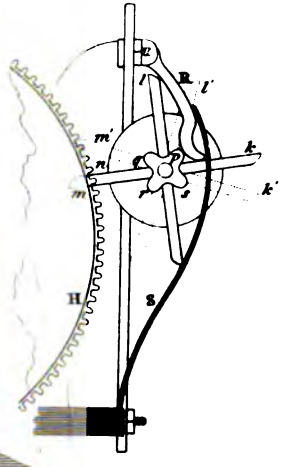


Fig. 4.



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Engraved by Wilson Lowry.

HOROLOGY.

CHIMES.

Pleyel's German Hymn.

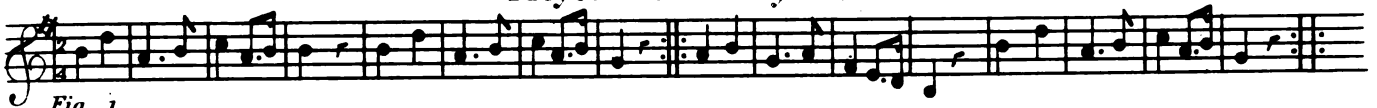


Fig. 1.

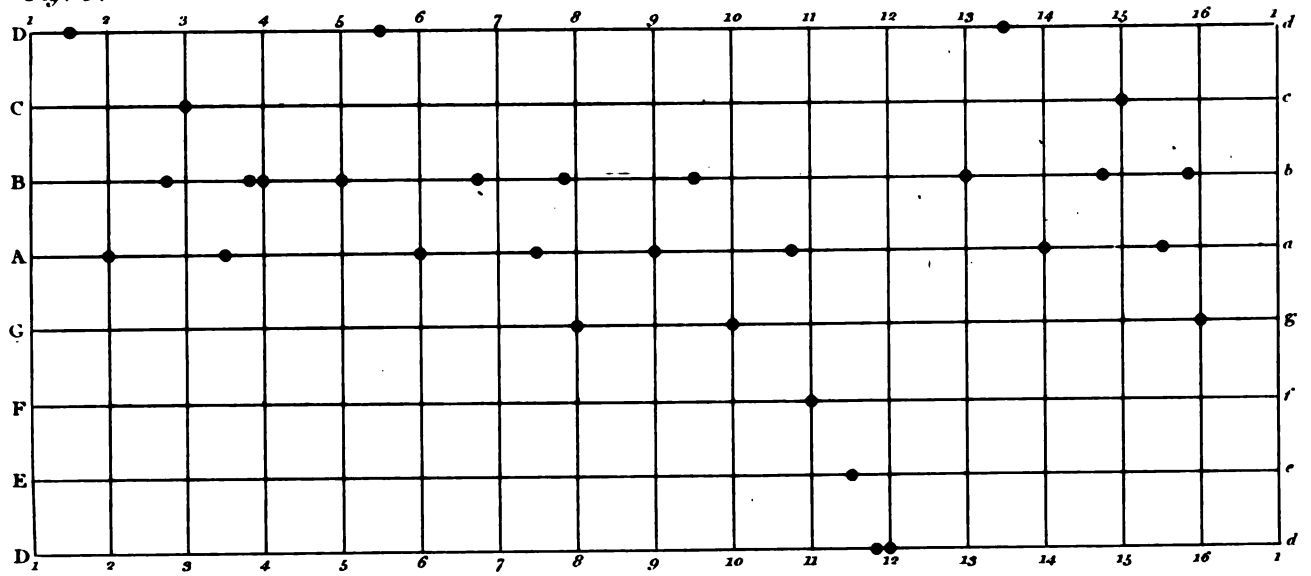


Fig. 4.

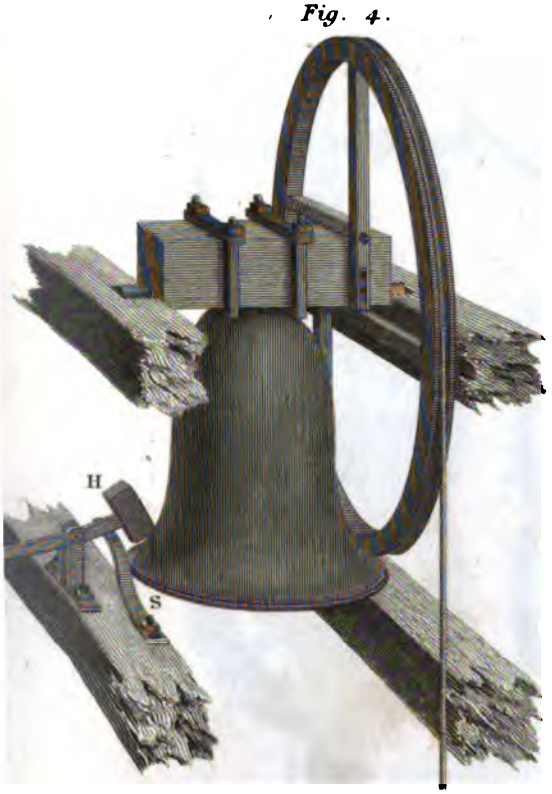


Fig. 3.

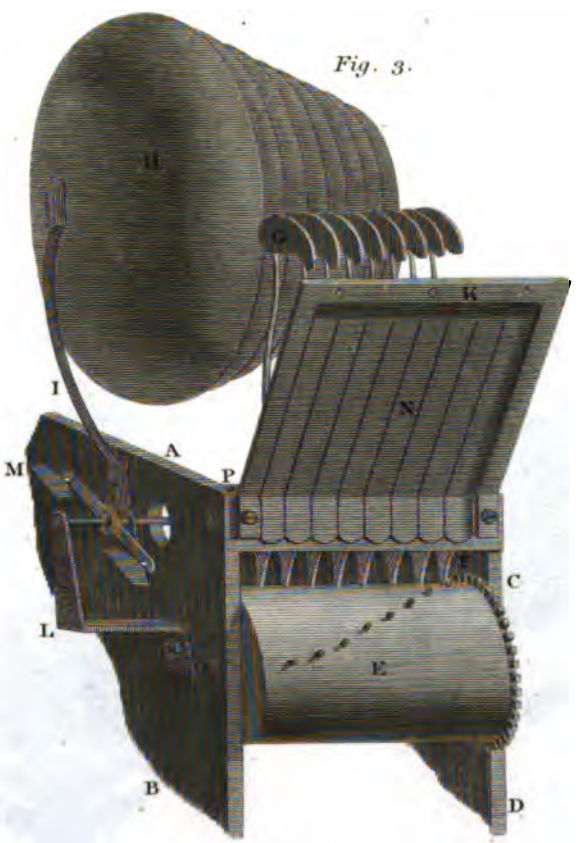


Fig. 2.

Published as the Act directs, April 1, 1807, by Longman, Hurst, Rees & Orme, Paternoster-Row.

Engraved by Wilson Lowry.

ANCIENT CLOCK BY HENRY DE WICK, IN 1370.

Fig. 1.

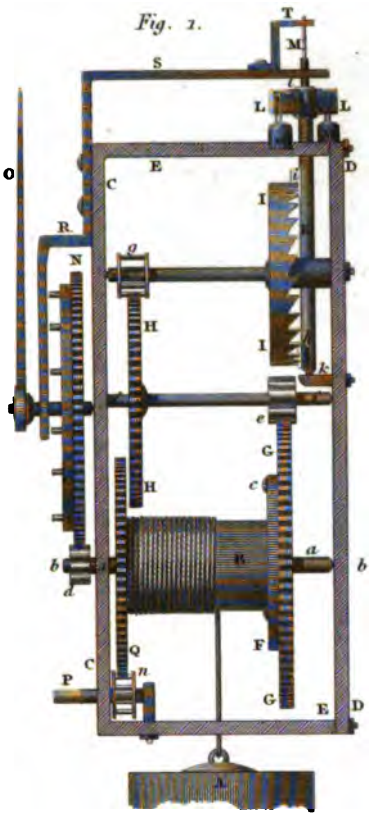
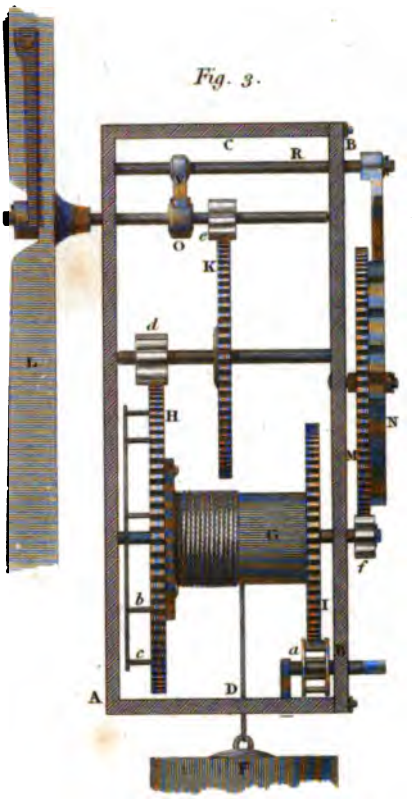


Fig. 3.



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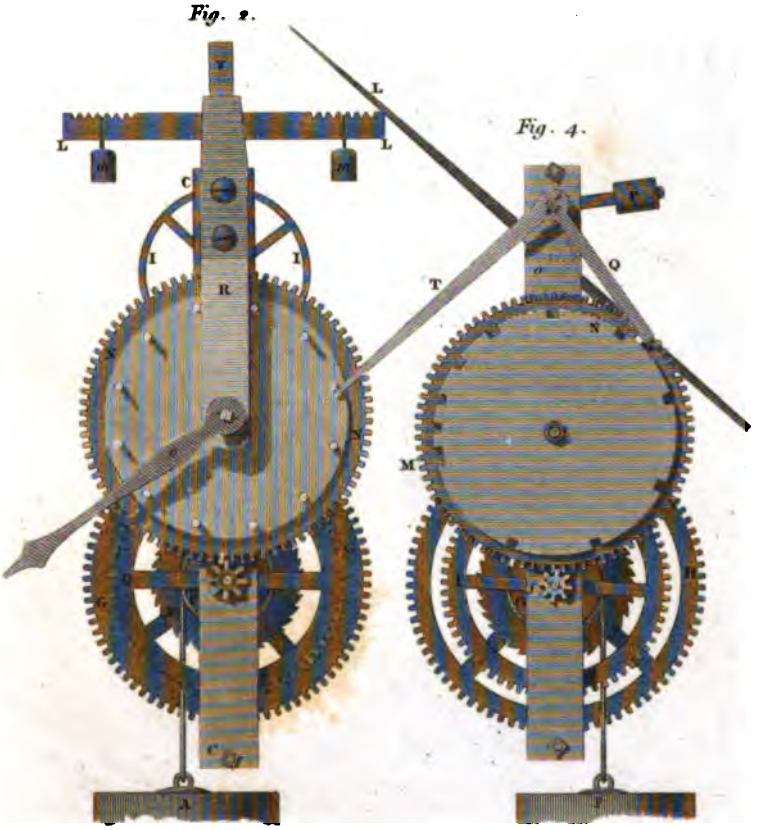
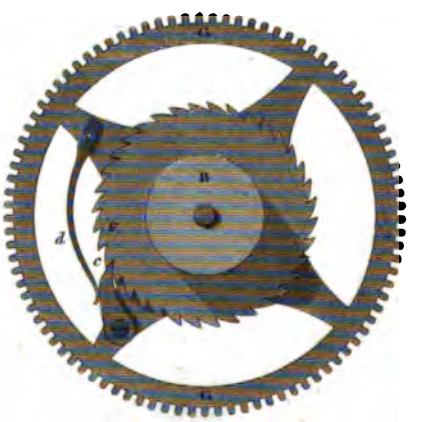


Fig. 4.

Fig. 5.



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HOROLOGY.

A Thirty hours Clock with a Larum and Count Wheel Striking Work.

Fig. 1.

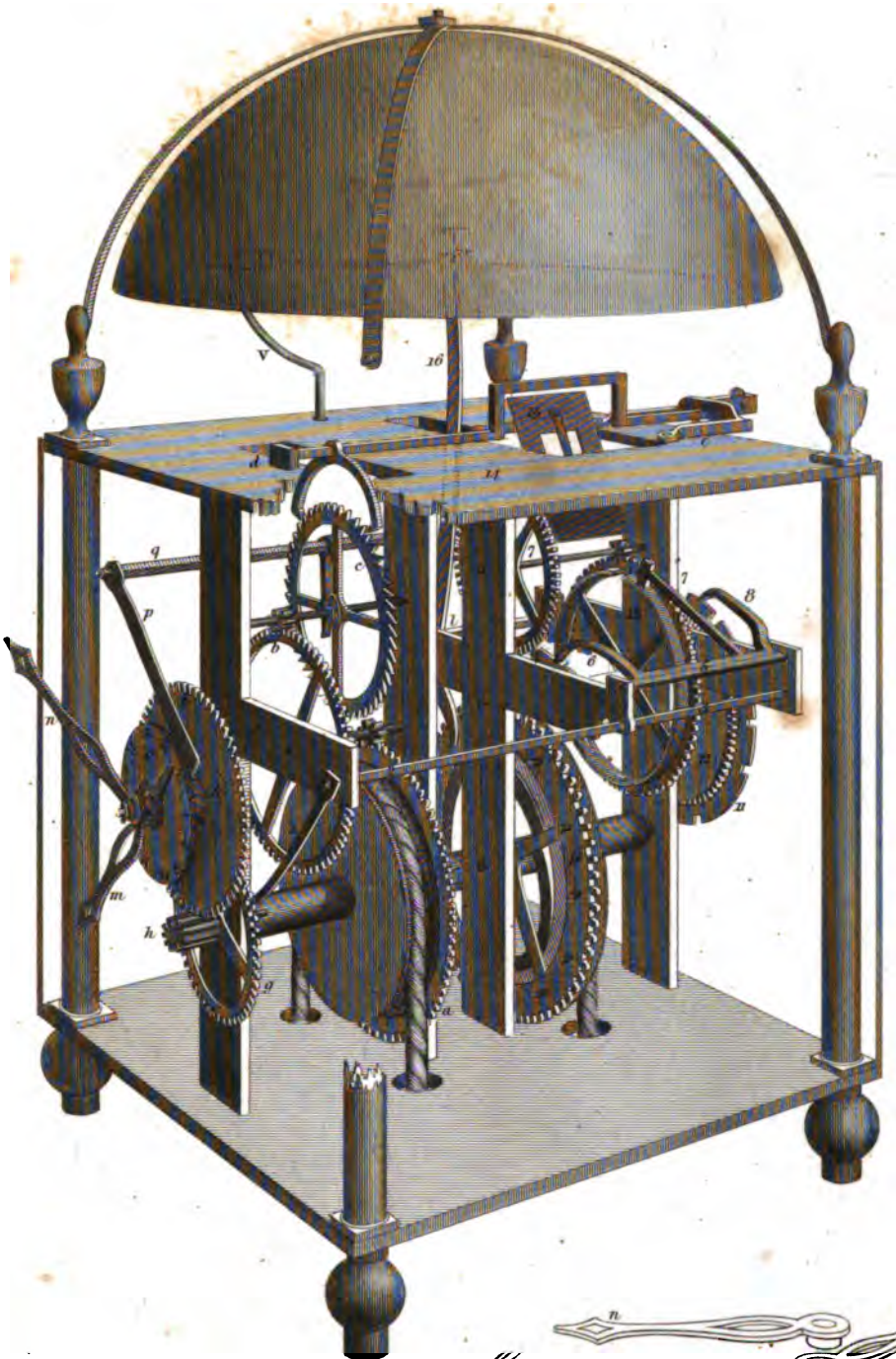


Fig. 3.

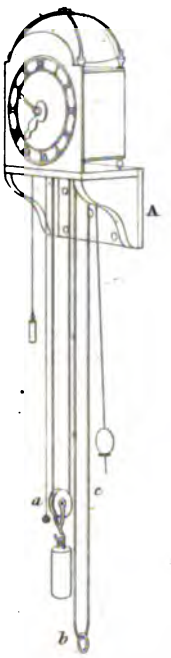
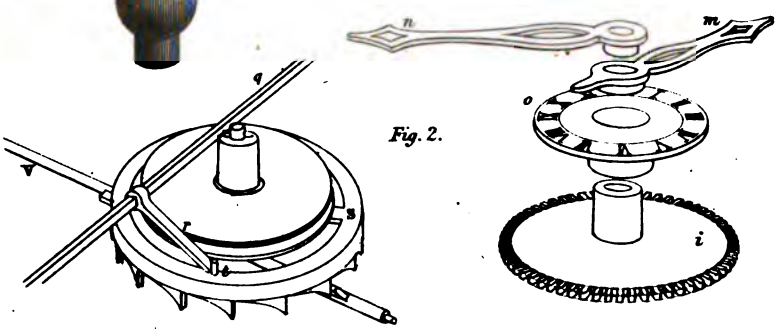


Fig. 2.



Farey Jun. del.

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Lowry sculp.

CALLIPERING.

(ART. CLOCK)

Fig. 1.

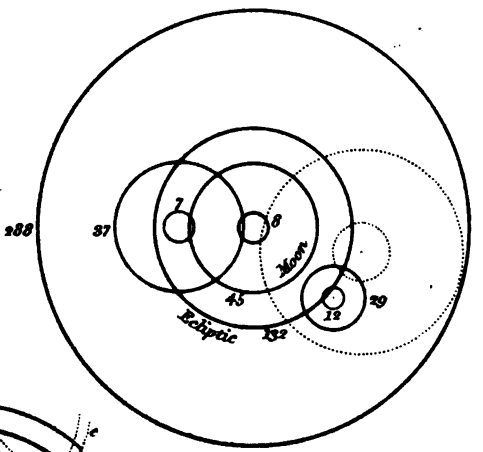


Fig. 2.

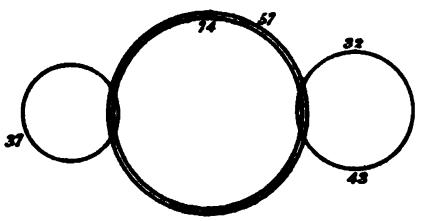
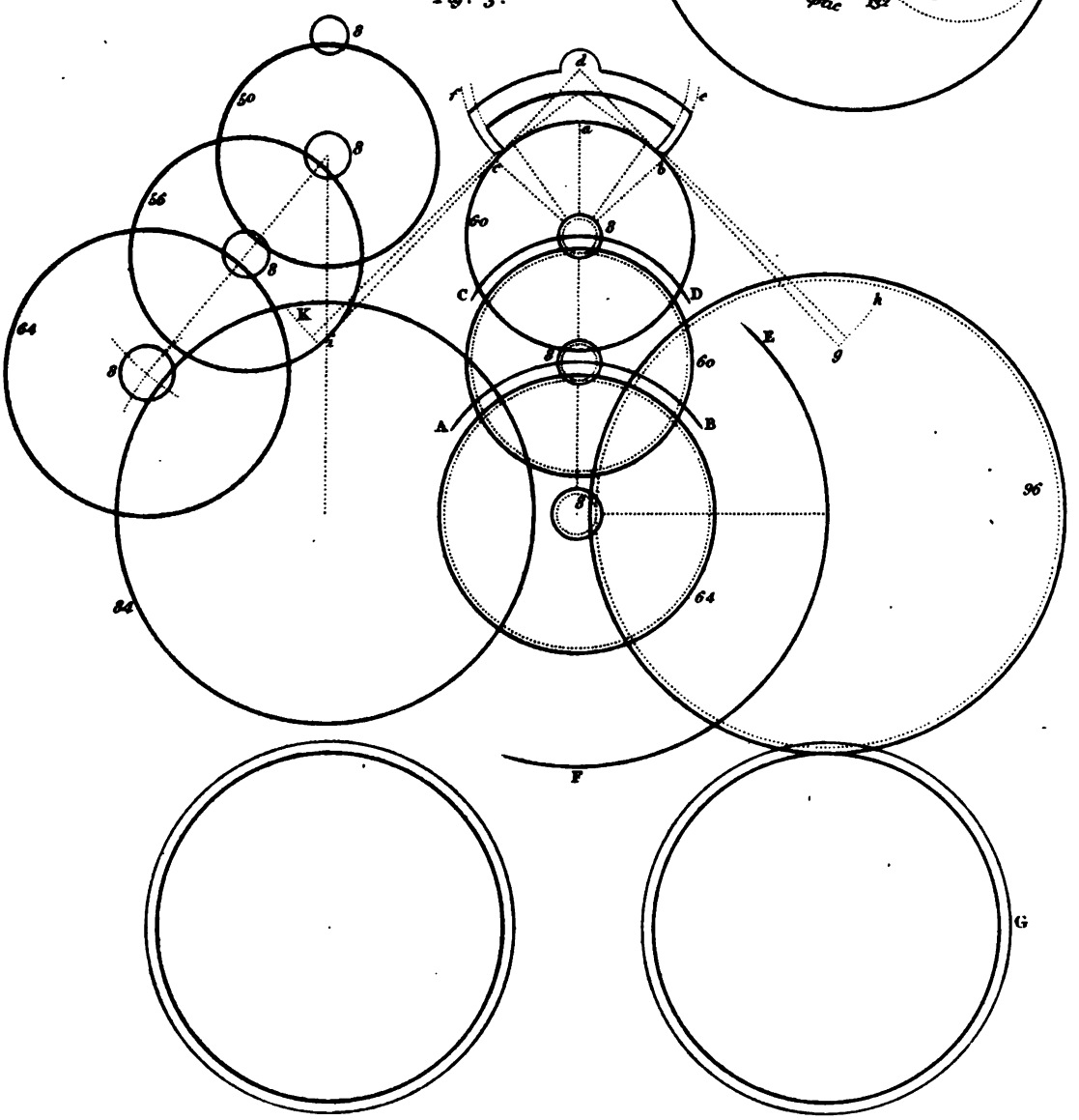


Fig. 3.



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Engraved by Wilson Lowry.

HOROLOGY.

Portable eight days Clock.

Fig. 3.

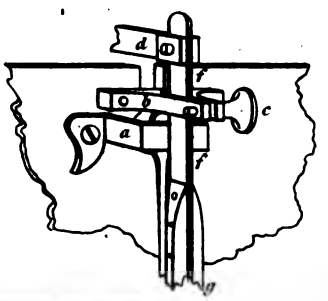


Fig. 2.

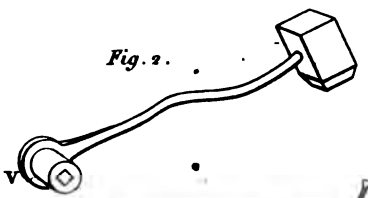
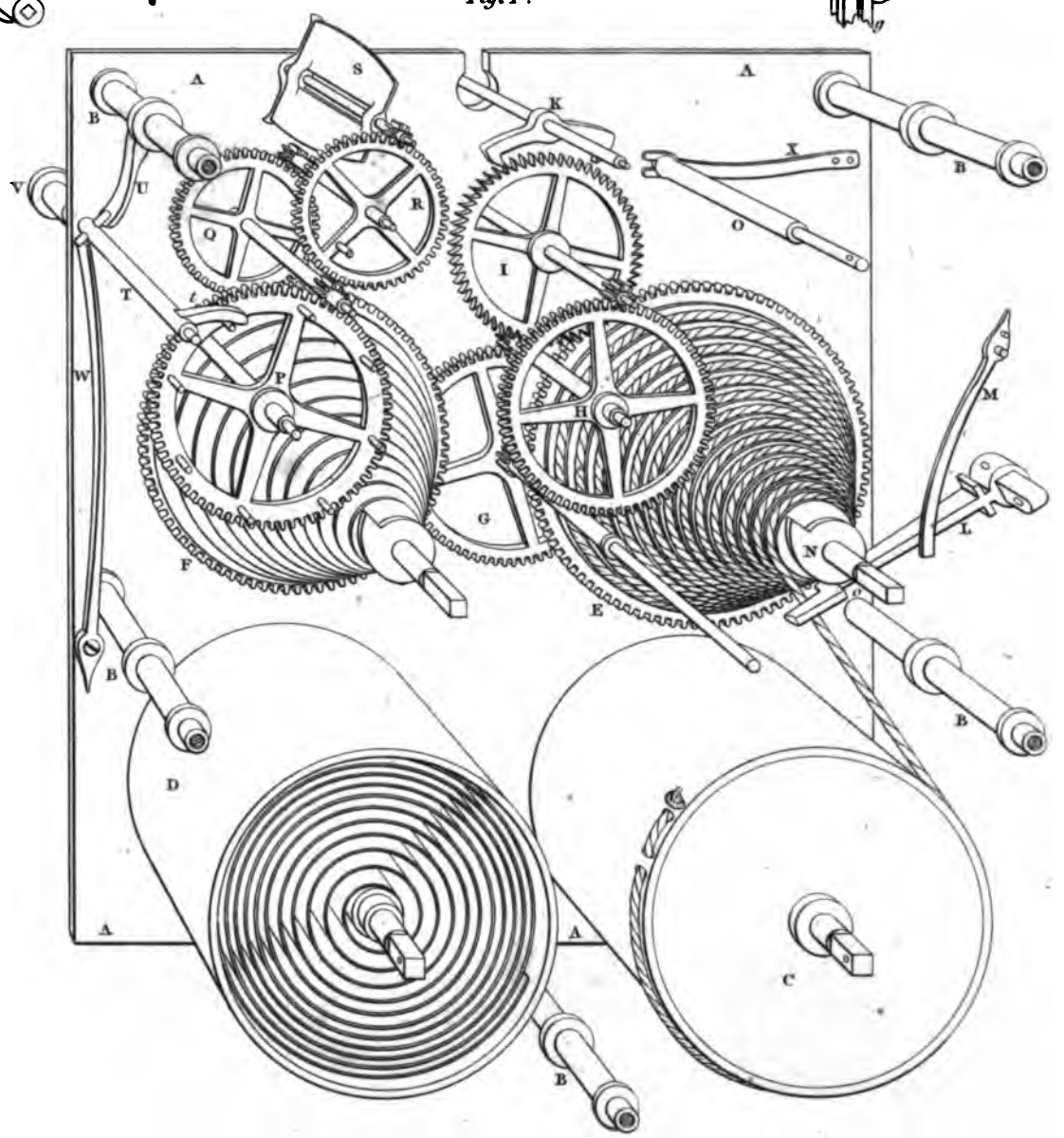


Fig. 1.



J. Farey Junr. delin. Published as the Act directs, 1811, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Engraved by [illegible]

HOROLOGY.

DIAL WORK AND STRIKING PART OF AN EIGHT DAYS CLOCK.

Fig. 1.

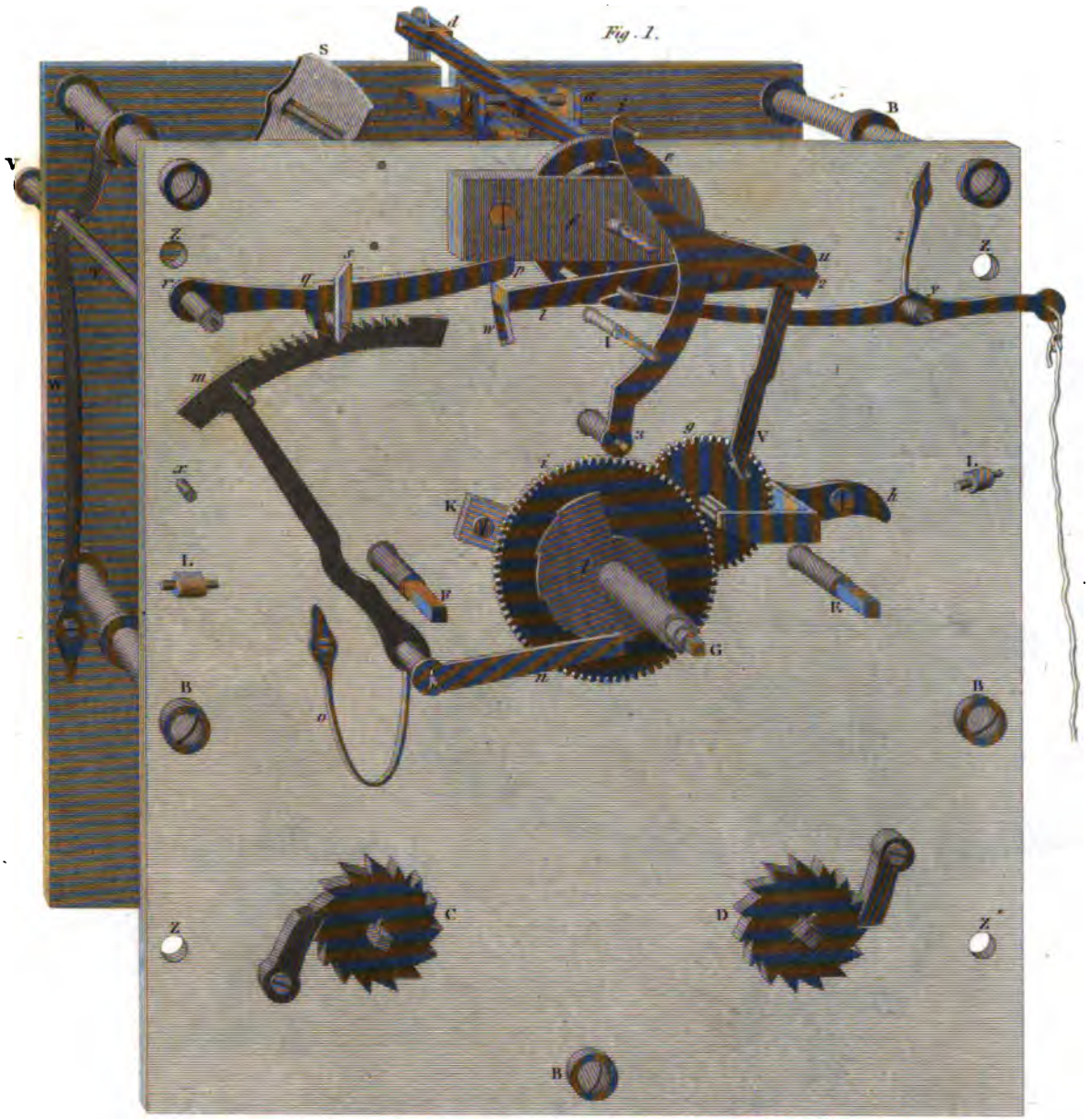
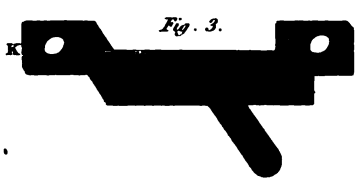


Fig. 2.

Fig. 3.



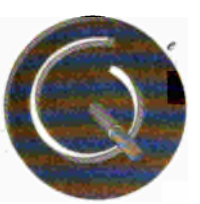


Fig. 4.

Mr. Mudge's, TIME KEEPER.

Fig. 3.

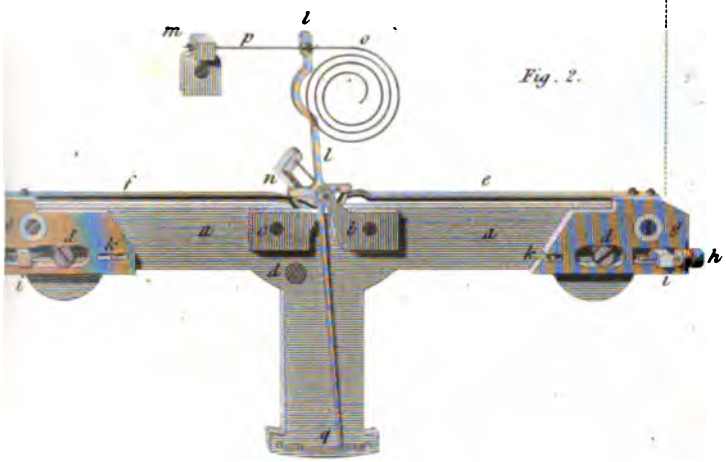


Fig. 2.

Fig. 1.

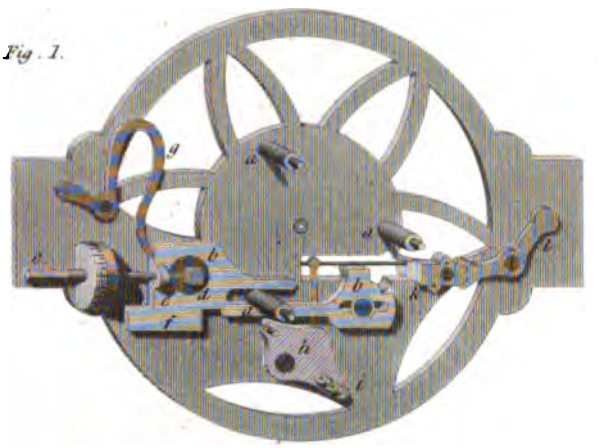


Fig. 5.

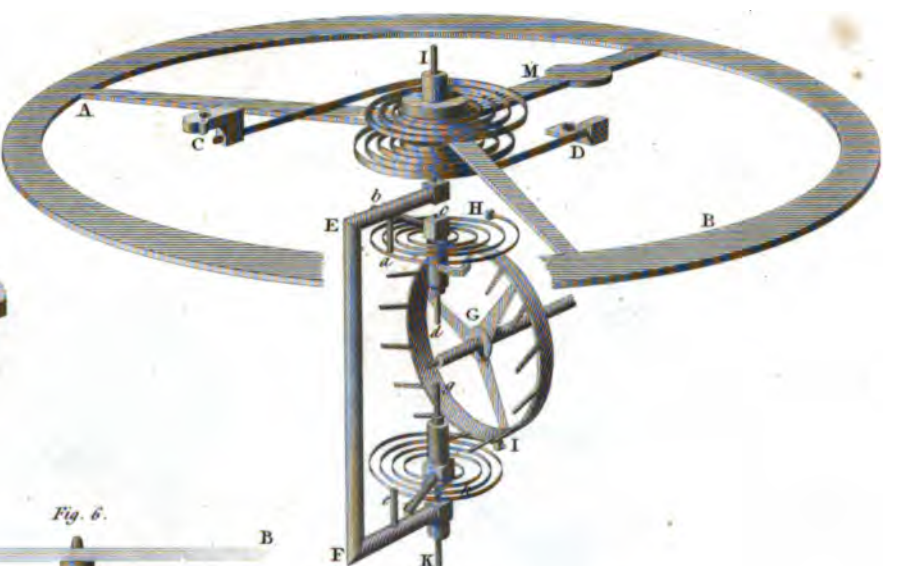


Fig. 4.

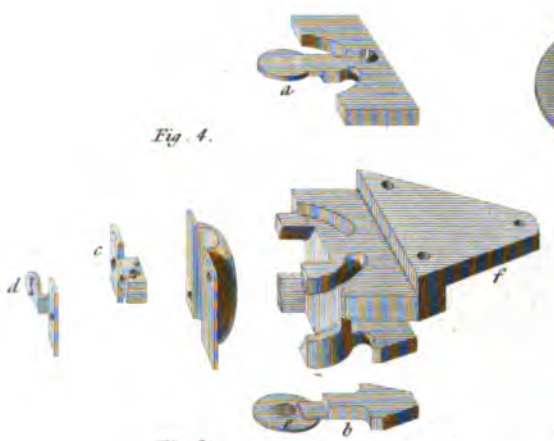


Fig. 7.

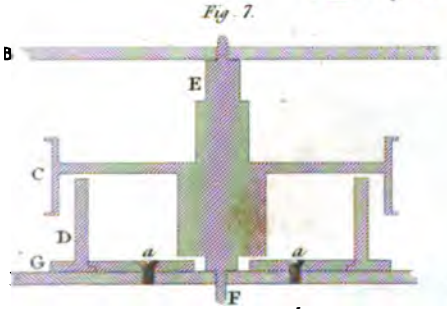
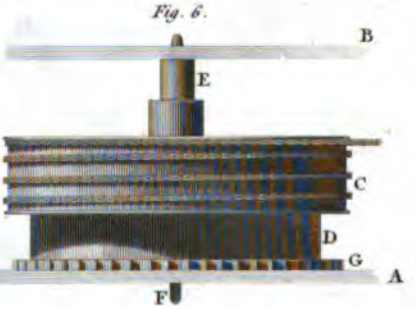
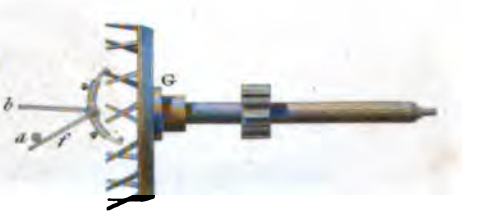


Fig. 6.





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ARNOLD'S AND EARNSHAW'S CHRONOMETERS.

Fig. 1.

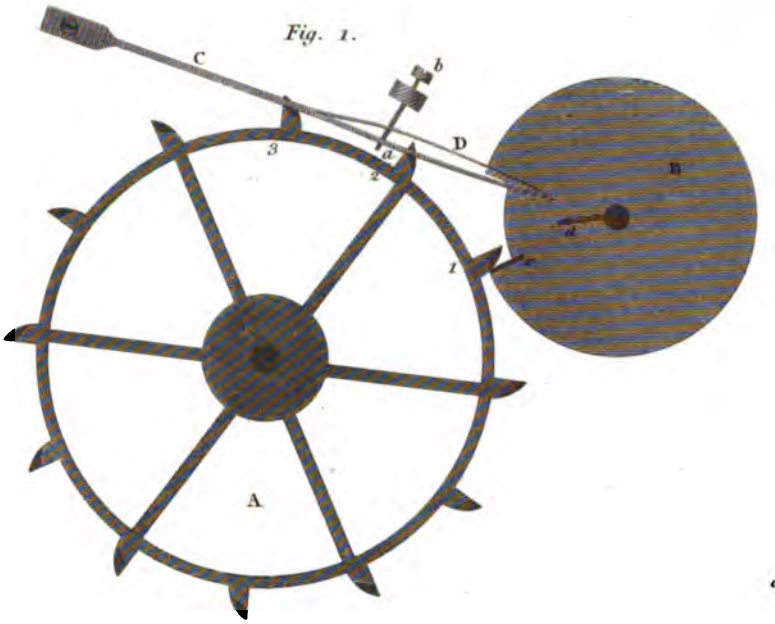


Fig. 2.

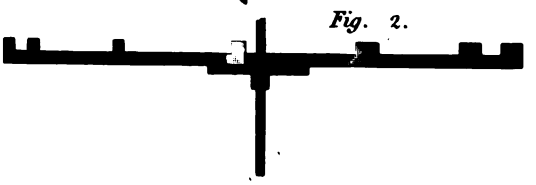


Fig. 3.

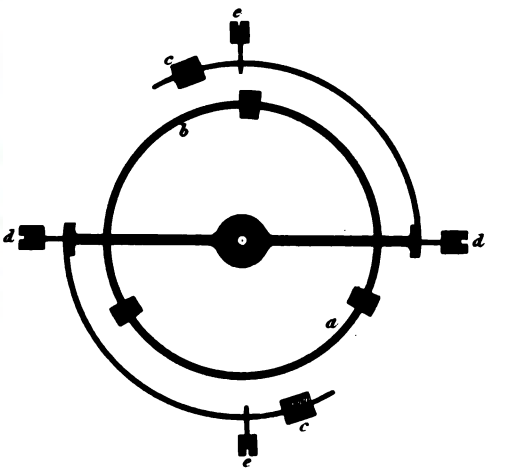


Fig. 4.

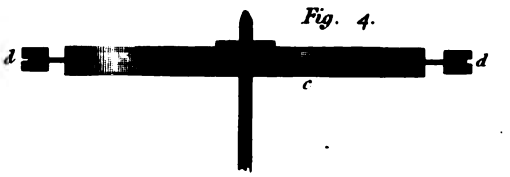


Fig. 5.

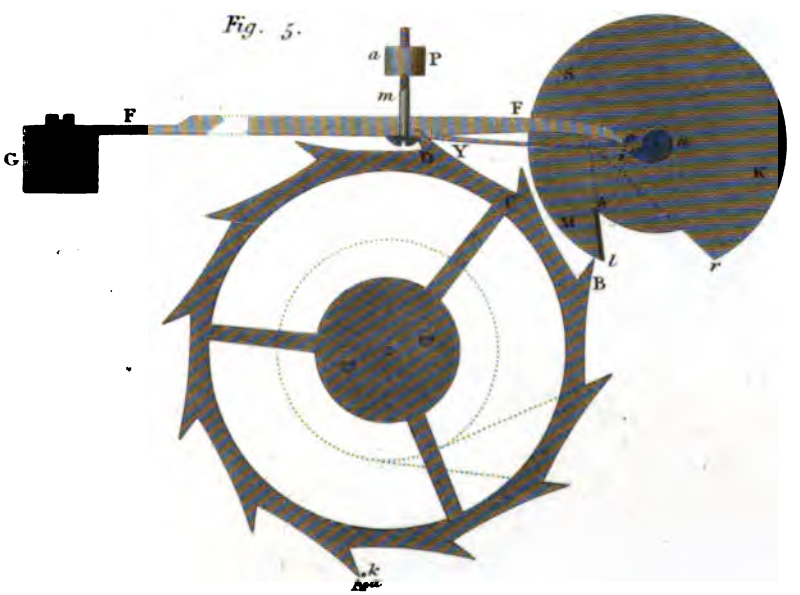


Fig. 6.

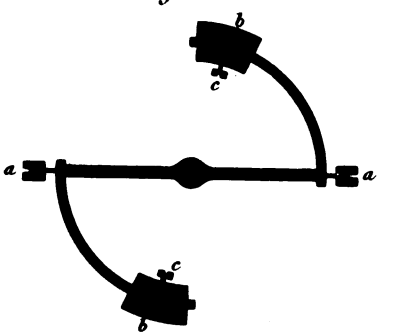
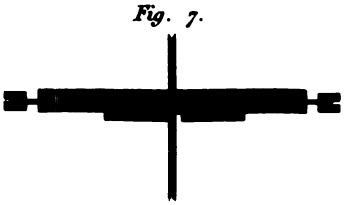


Fig. 7.



Parry Jun.r delin.

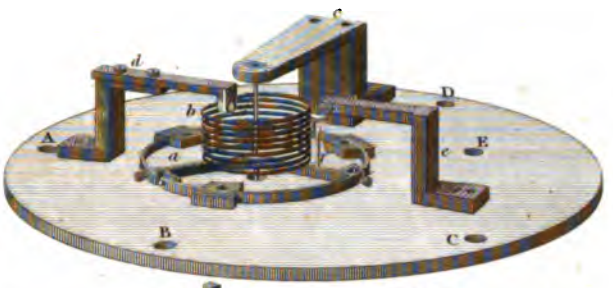
Published as the Act directs, Dec.r 1807, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

HOROLOGY.

BROCKBANKS CHRONOMETER.

Fig. 1.



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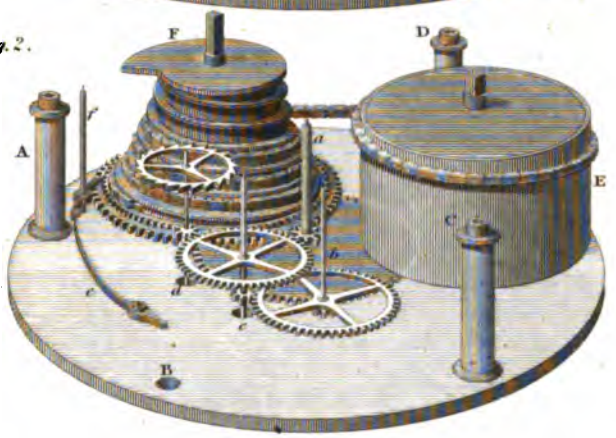


Fig. 3.

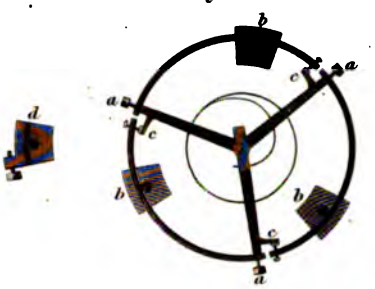


Fig. 4.

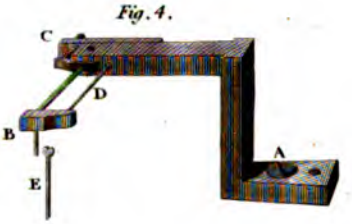


Fig. 7.

Fig. 8.

Fig. 6.

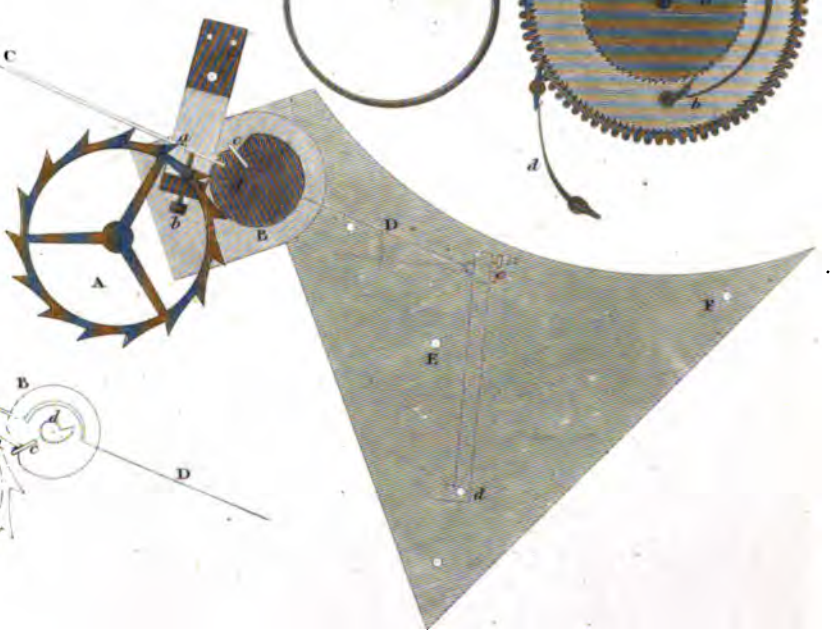
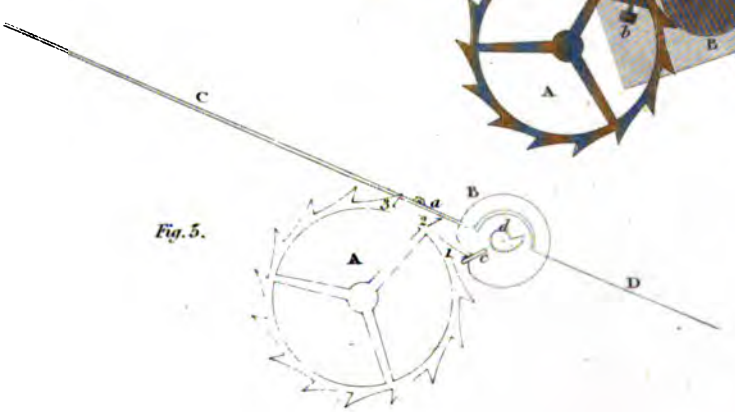
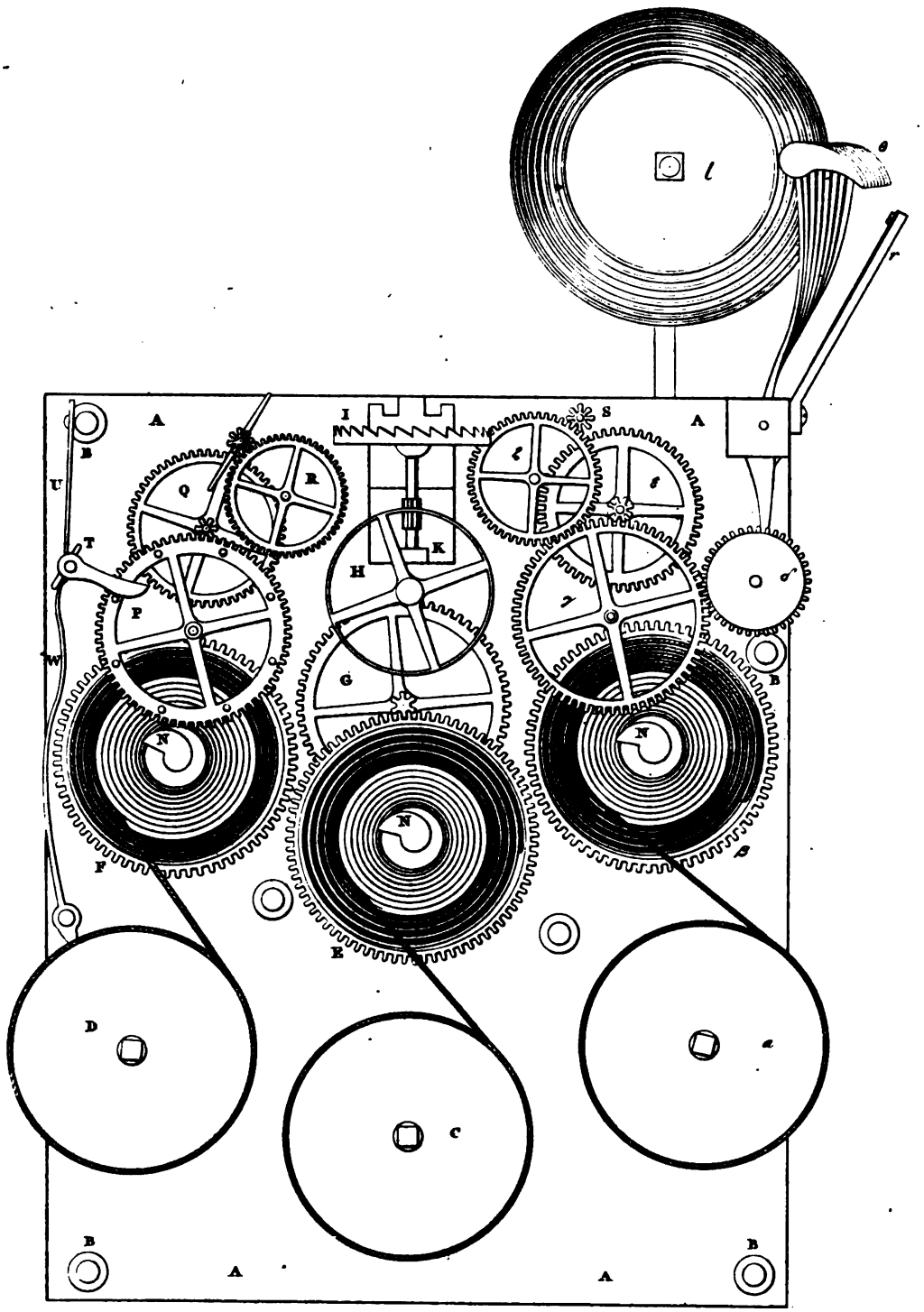


Fig. 5.



Harvey Jun. del. *Published as the Act directs, 1817, by Longman, Hurst, Rees, Orme, & Brown, Paternoster Row, London.* *Lowry sculp.*

CLOCK WITH CHIMES.



Jun. delin. Published as the Act directs, 1808, by Longman, Hurst, Rees & Orme, Paternoster Row. Engraved by Wilson Lowry.

HOROLOGY.

CLOCK WITH CHIMES.

J. Farey Jun.r delin.

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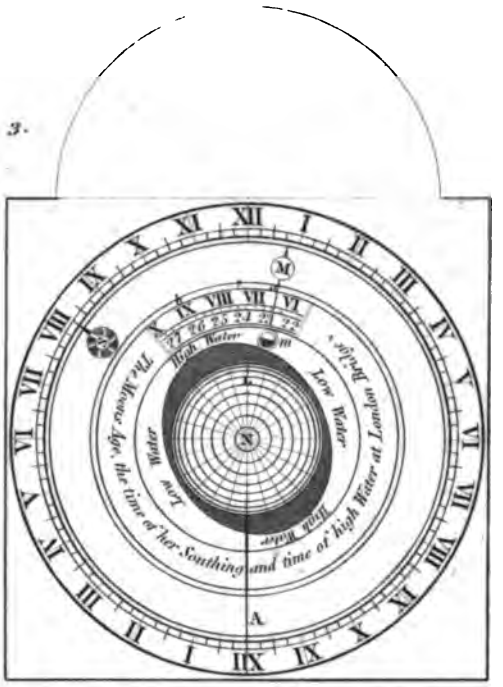
Engraved by Wilson Lowry.

HOROLOGY.

2.nd Clock by M.r Ferguson

Fig. 3.



Clock by D.r Franklin

Fig. 1.

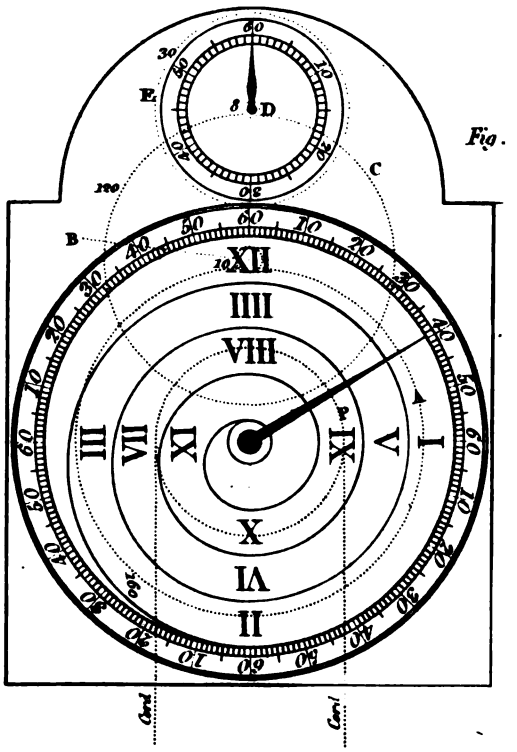


Fig. 4.

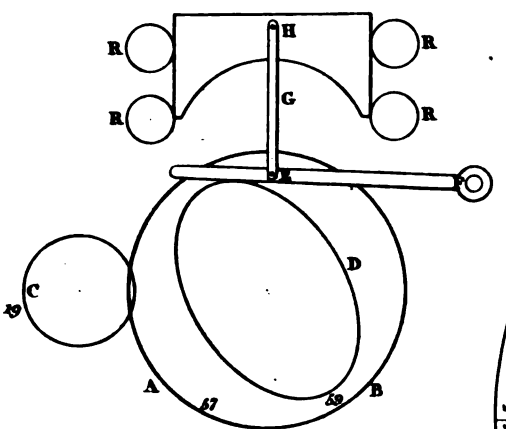
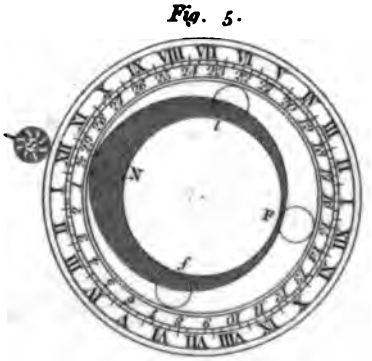
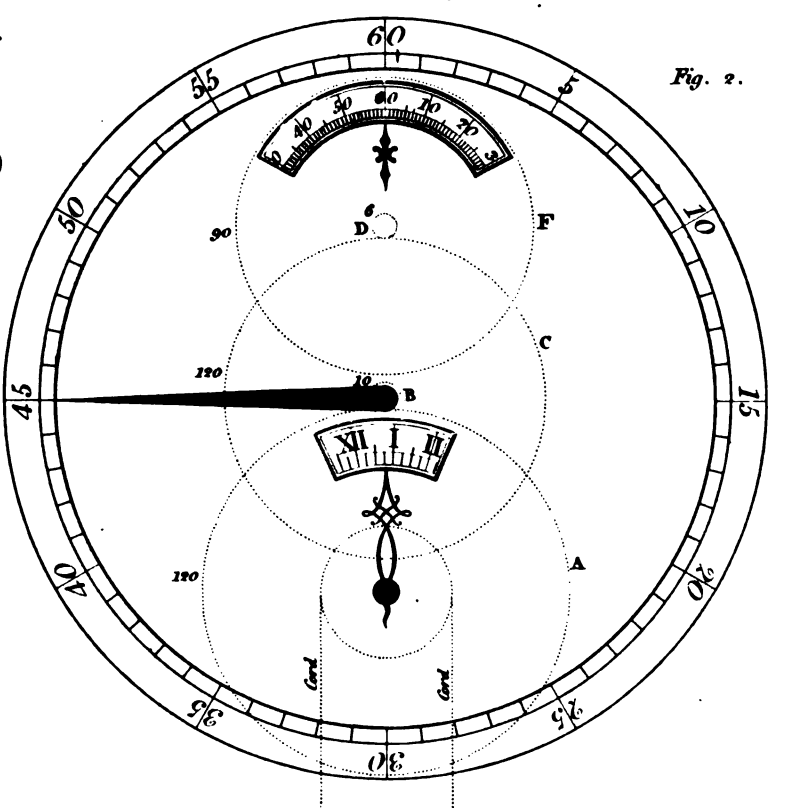


Fig. 5.



Clock by M.r J. Ferguson

Fig. 2.



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Engraved by Wilson Lowry.

CLOCK TOOLS.

Published as the Act directs, 1809, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

HOROLOGY.

CLOCK TOOLS.

Published as the Act directs, by Longman, Hurst, Rees & Orme, Paternoster Row, 1809.

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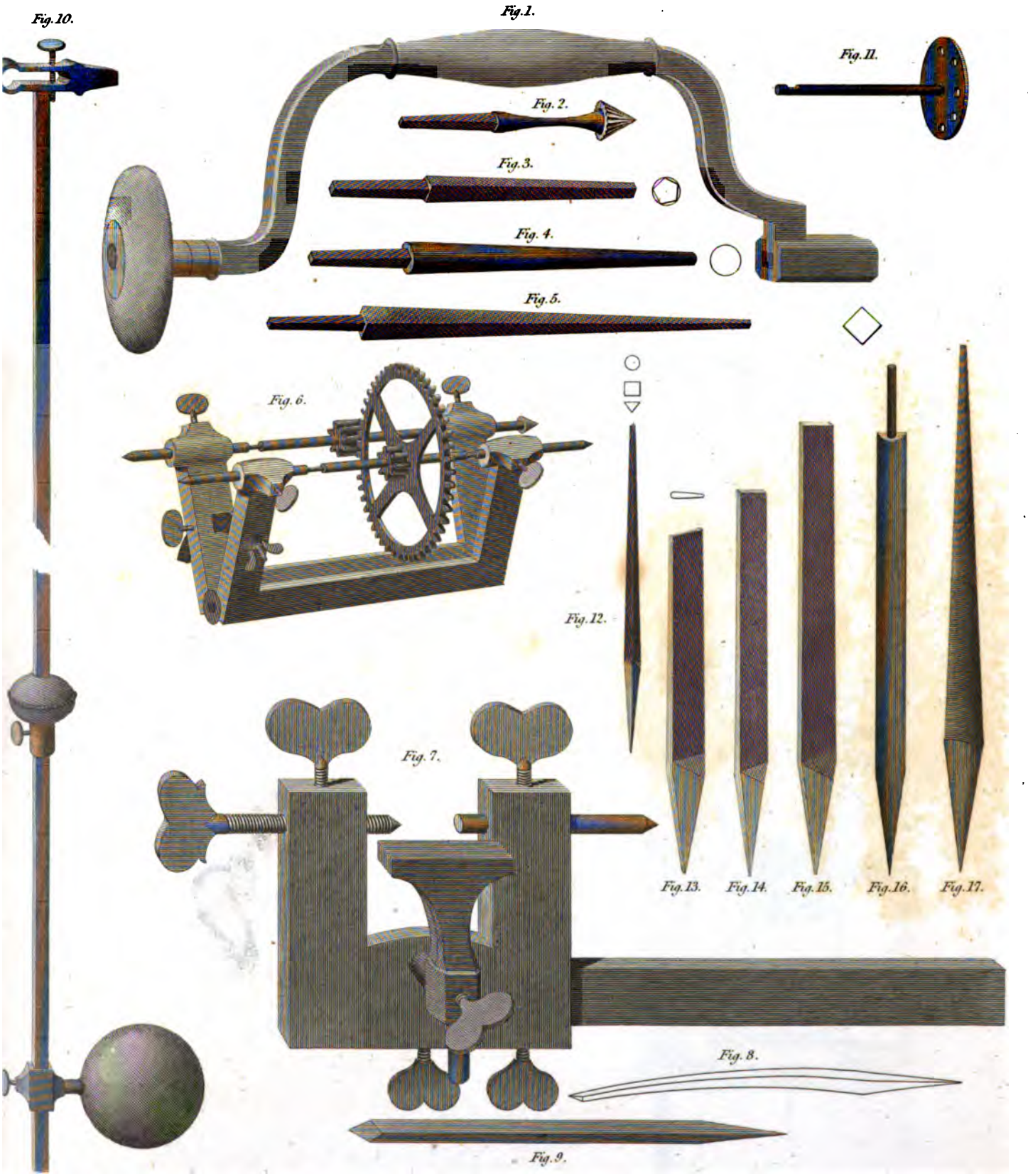
HOROLOGY.

CLOCK TOOLS.

PLATE XXI.



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Lowry sculp.

ASTRONOMICAL CLOCK BY REID.

Fig. 5.

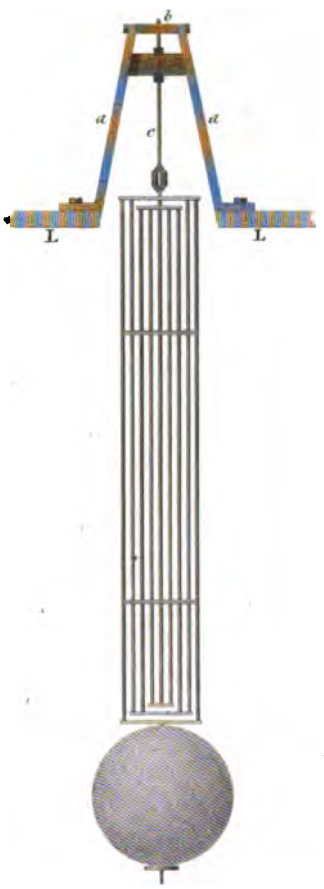


Fig. 6.

Fig. 1.

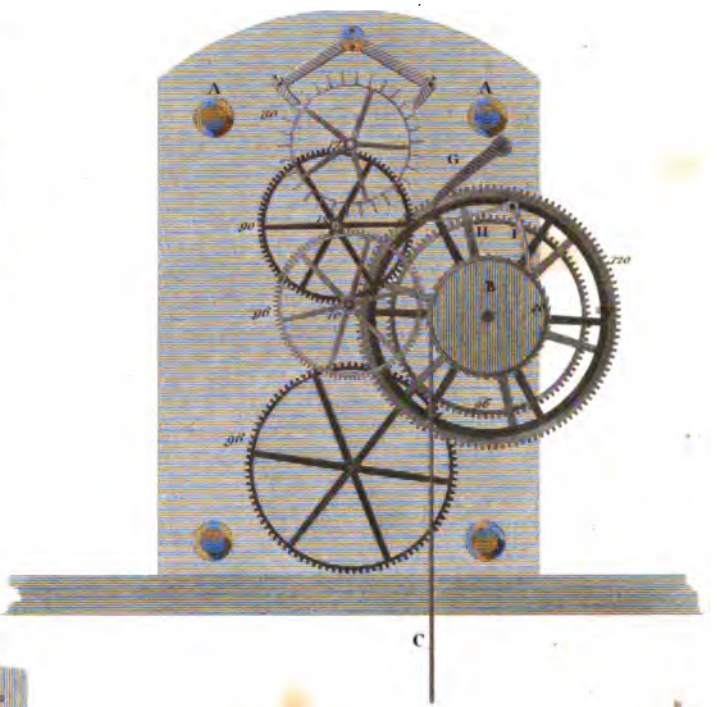
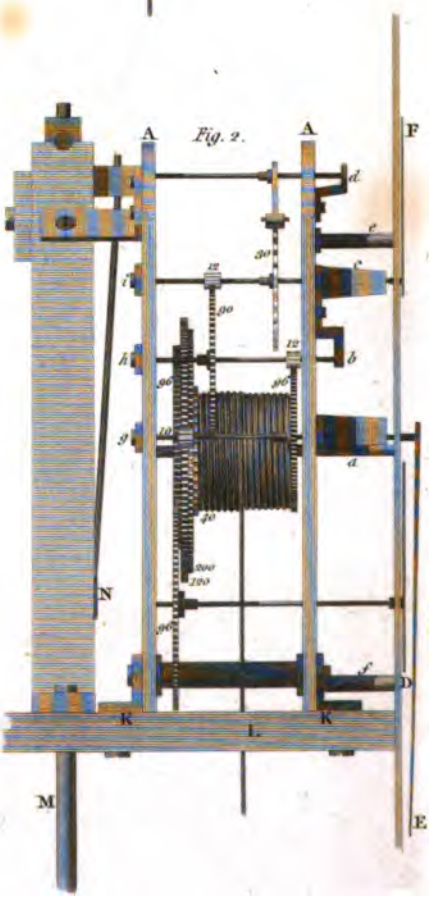


Fig. 3.

Fig. 4.

Fig. 2.

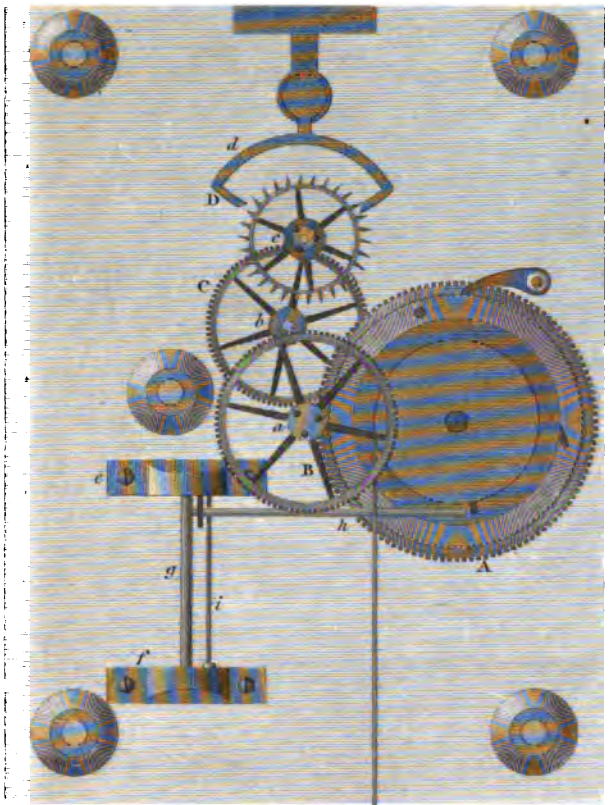


Published as the Act directs, 1810, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

Astronomical Clock by Messrs. Brockbanks.

Fig. 1.



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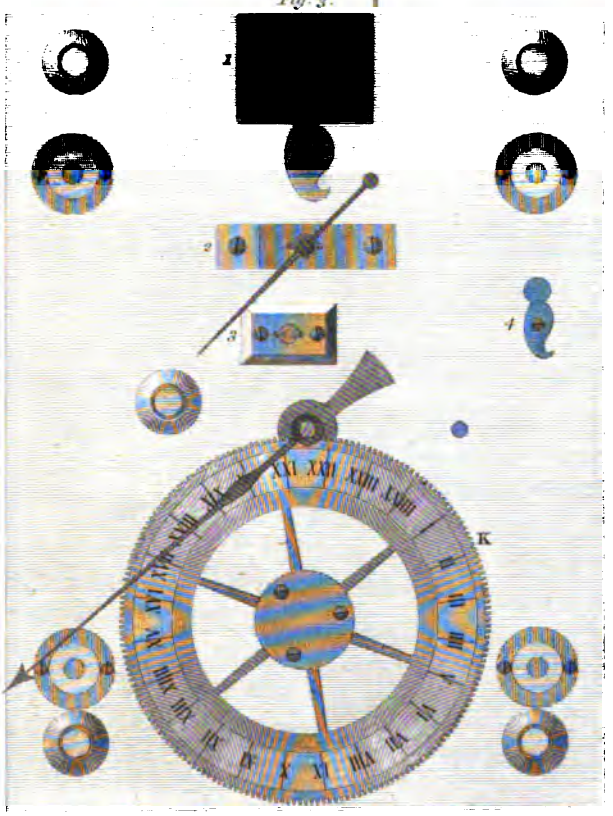

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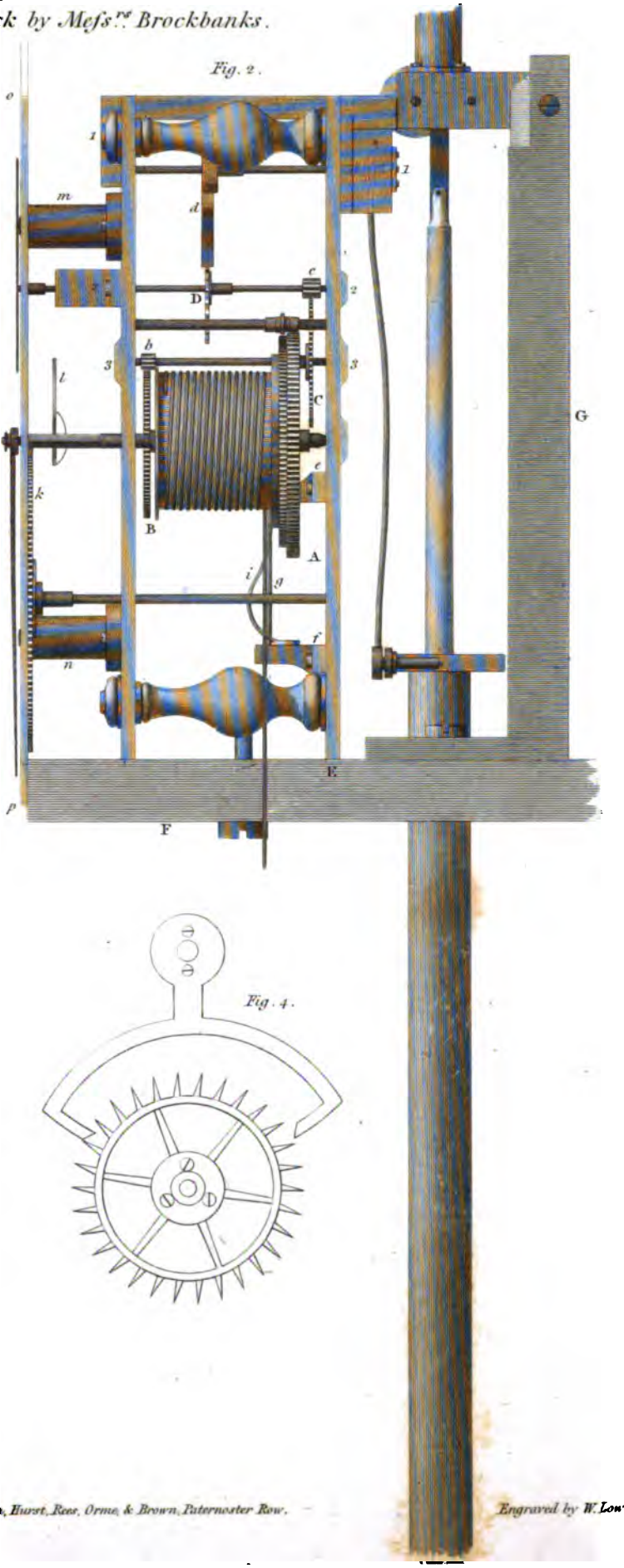
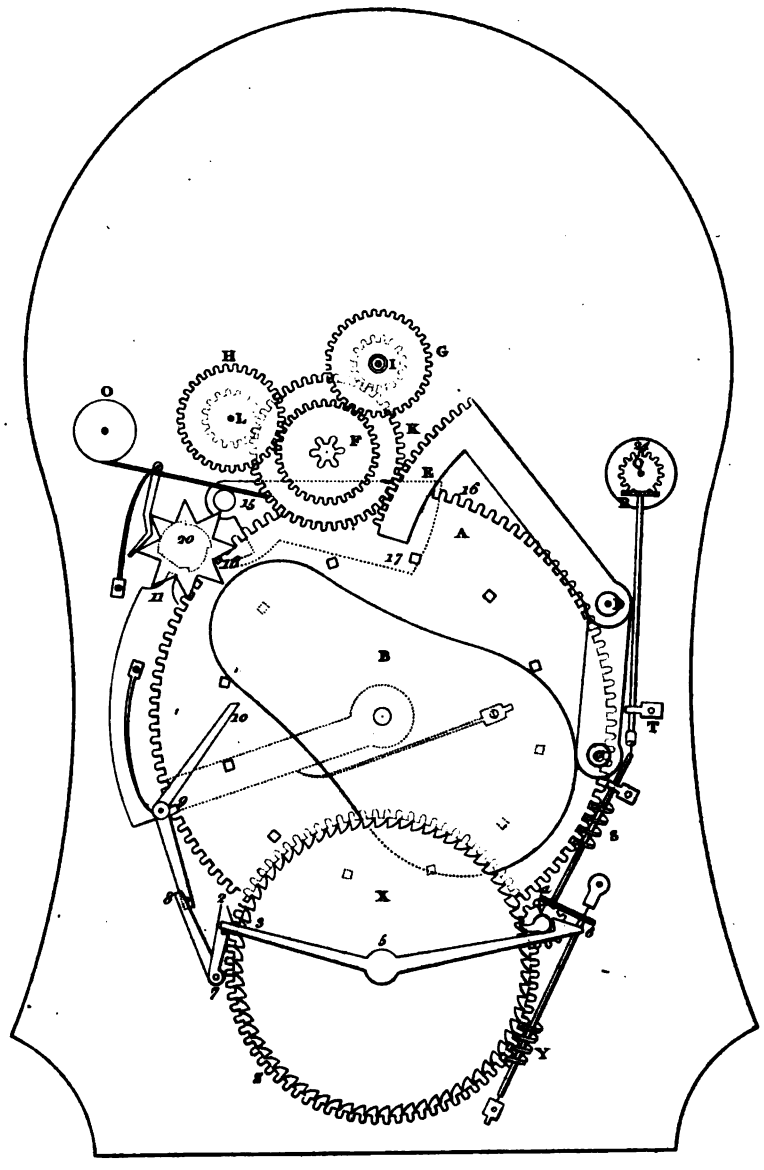
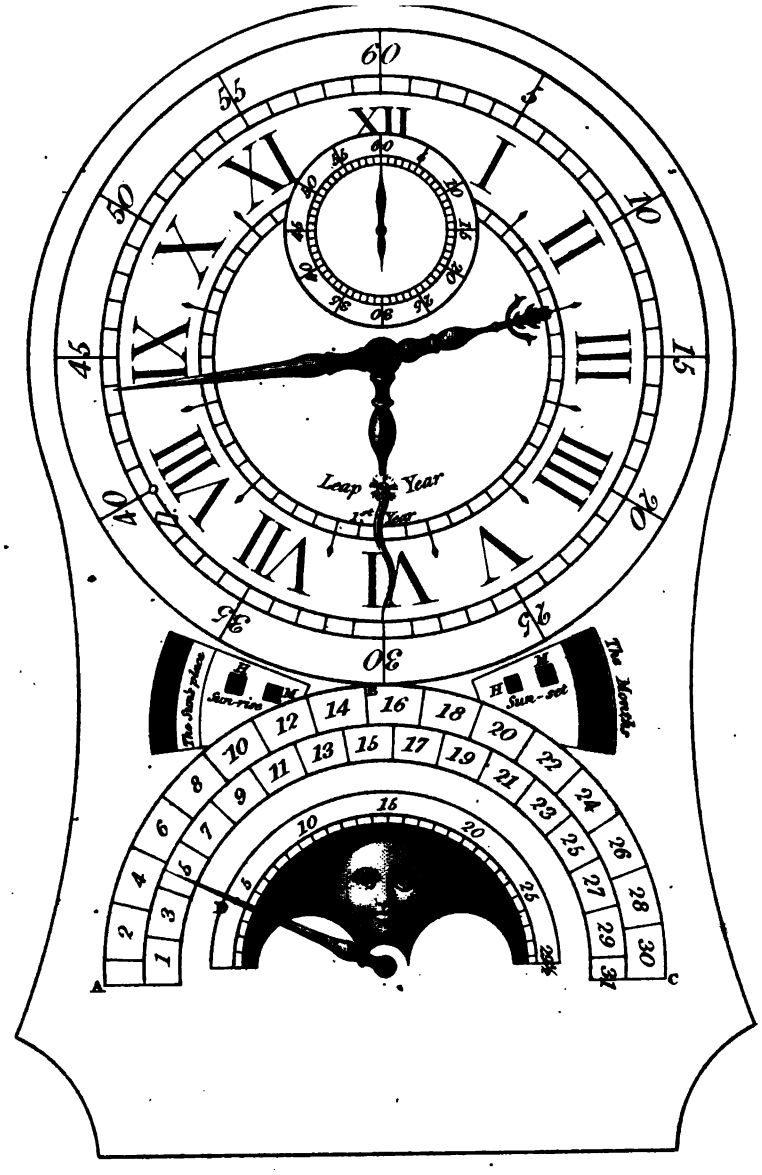


Fig. 4.

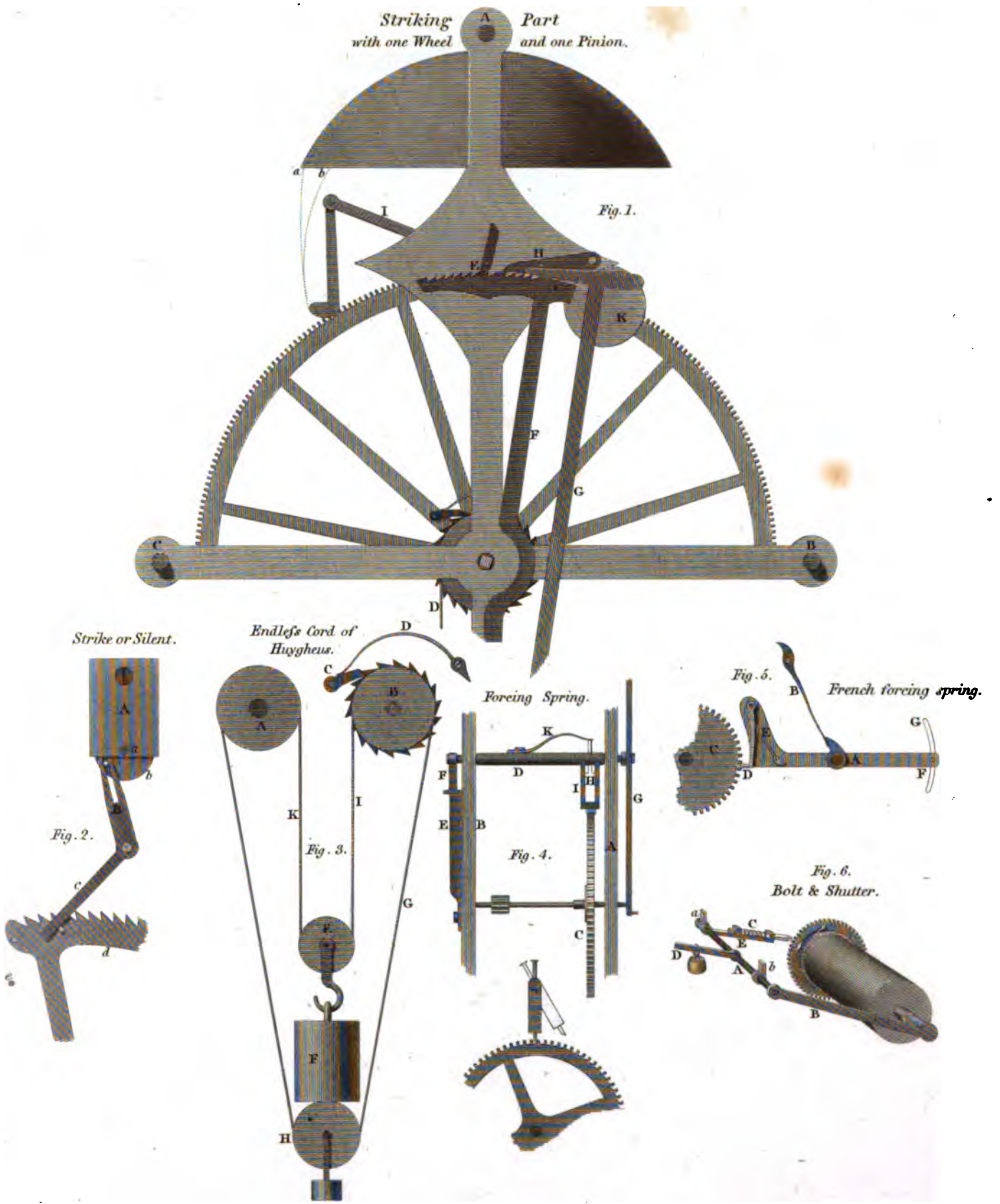
J. Farey delin. Published as the Act directs, 1821, by Longman, Hurst, Rees, Orme, & Brown, Paternoster Row. Engraved by W. Lowry.





Published as the Act directs, 1808, by Longman, Hurst, Rees and Orme, Paternoster Row.

Engraved by Wilson Lowry.



Published as the Act directs, 1809, by Longman, Hurst, Rees & Orme, Paternoster Row.

Engraved by Wilson Lowry.

Fig. 1.

Massey's striking part.

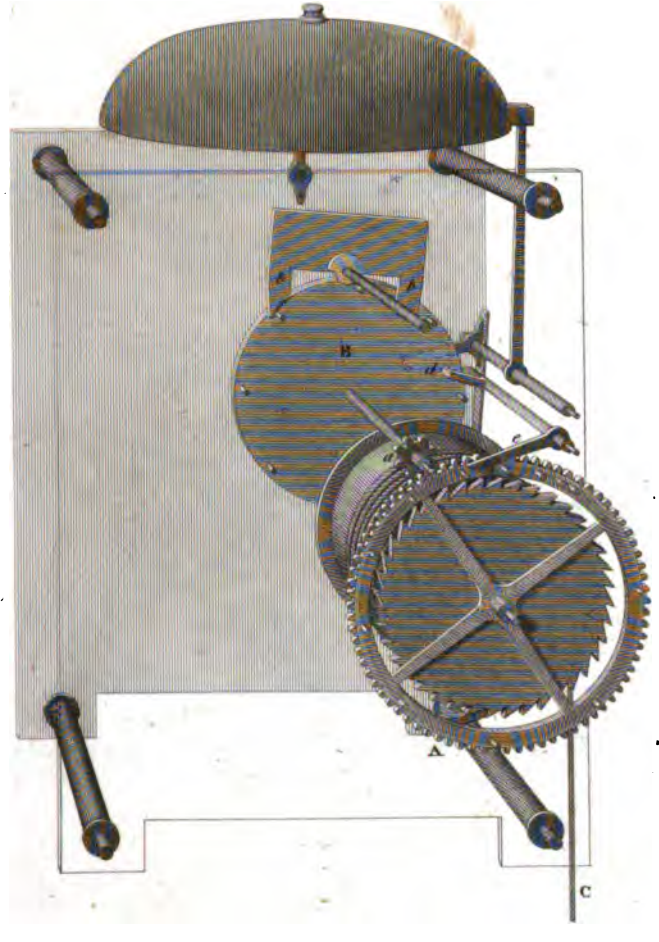


Fig. 2.

Prior's striking part.

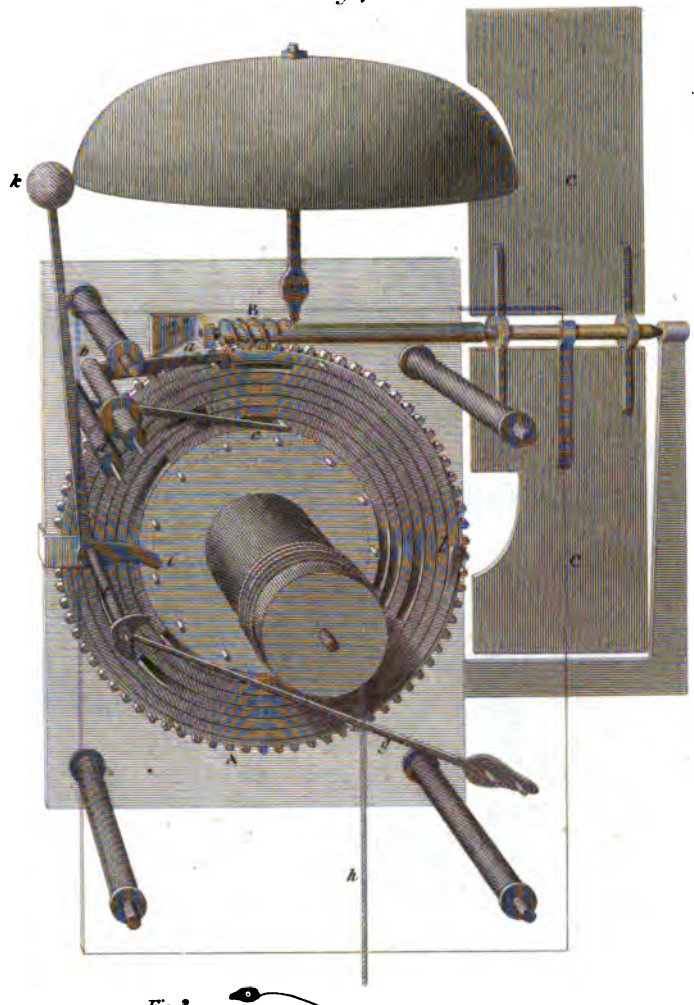


Fig. 3.

J. Farey Jun. del.

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Lowry sculp.

HOROLOGY.

TROUGHTON'S PENDULUM.

Fig. 1.

Fig. 2.

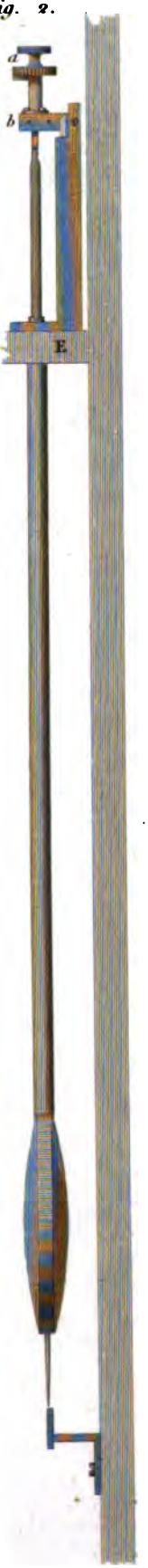

Fig. 4.

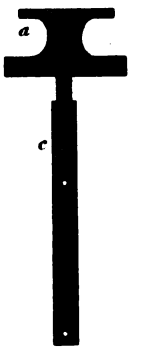

Fig. 9.

Fig. 5.

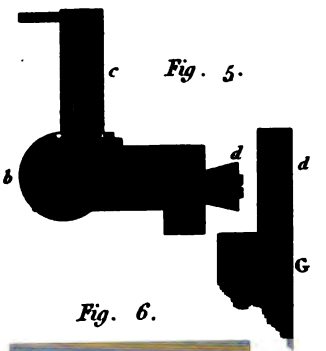

Fig. 6.

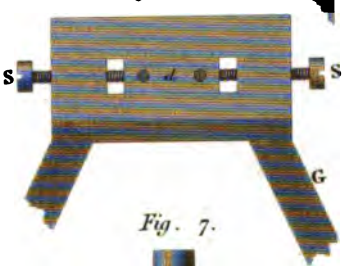

Fig. 7.

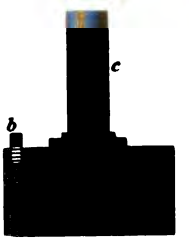

Fig. 8.

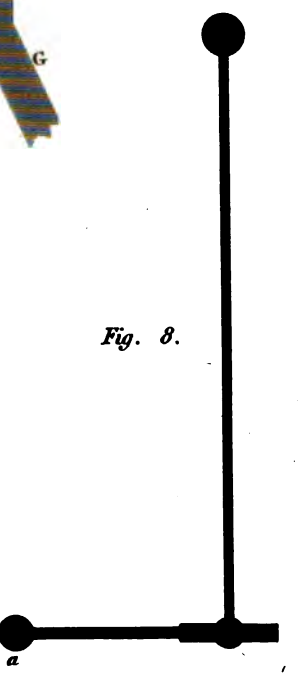

Fig. 3.

by J. Farey.

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HOROLOGY.

COMPENSATION CURBS.

PLATE XXVIII.

Fig. 1.

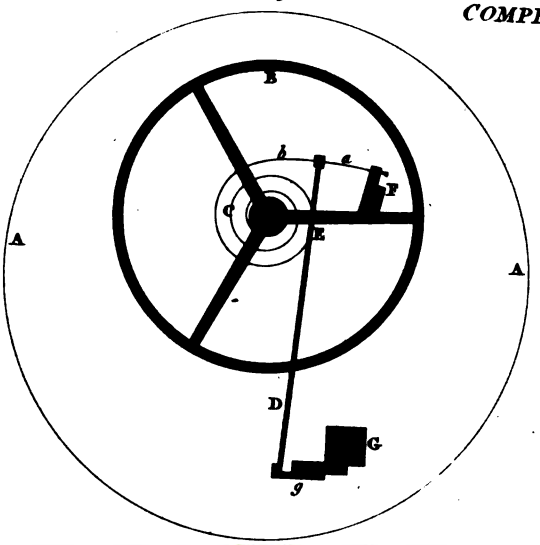


Fig. 2.

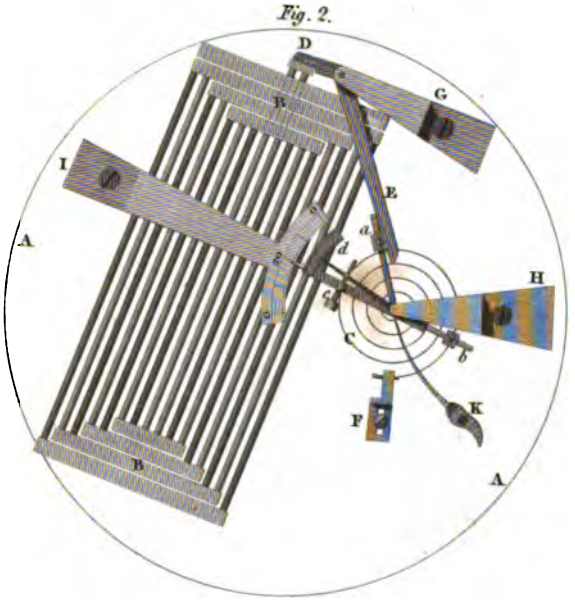


Fig. 3.

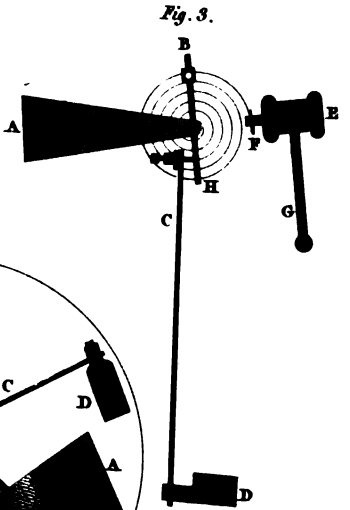
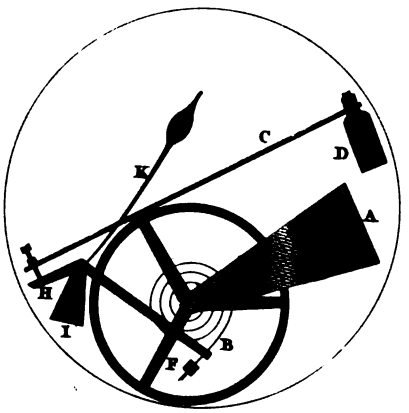


Fig. 4.



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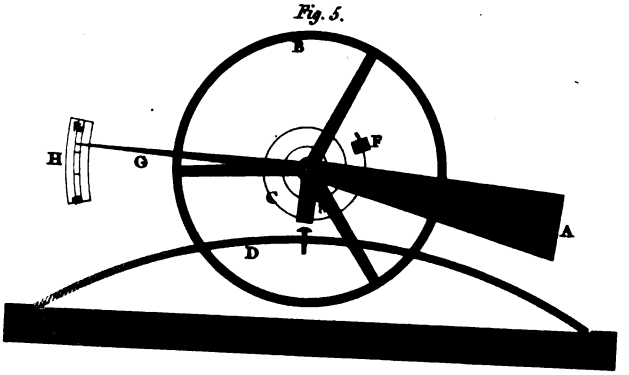


Fig. 6.

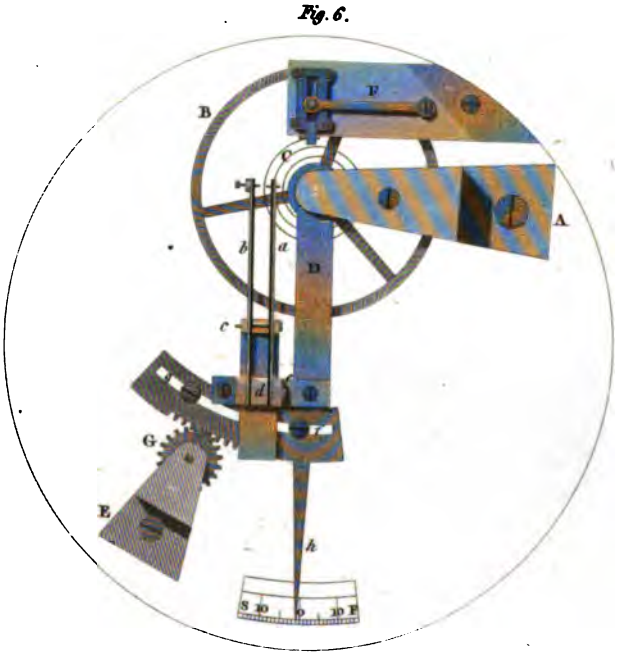
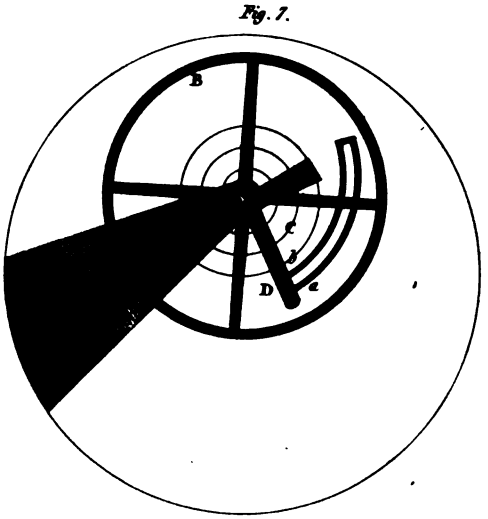


Fig. 7.



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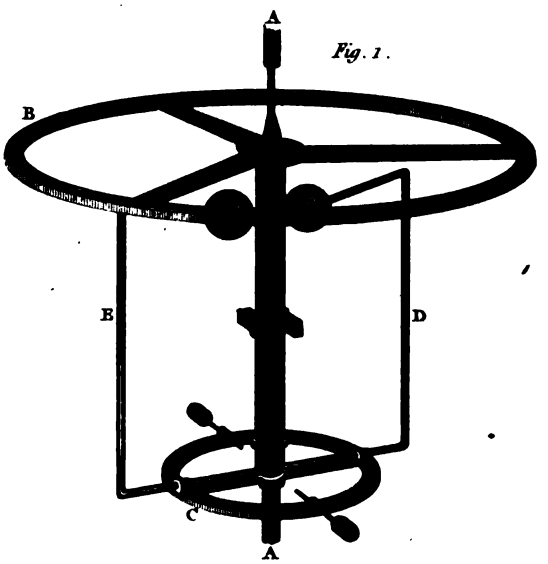
COMPENSATION BALANCES.

Fig. 1.



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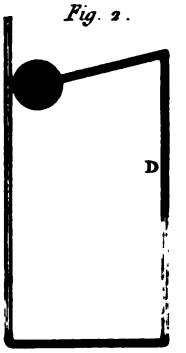


Fig. 3.

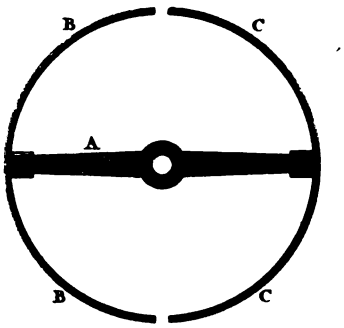
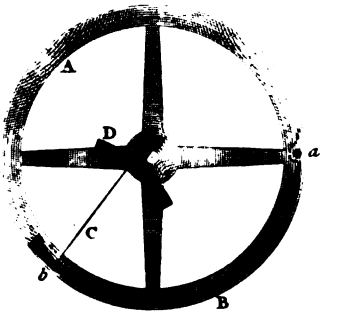


Fig. 4.



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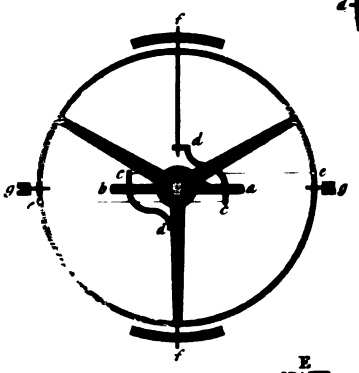


Fig. 6.

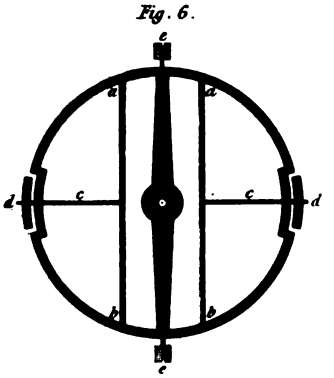


Fig. 7.

Fig. 8.

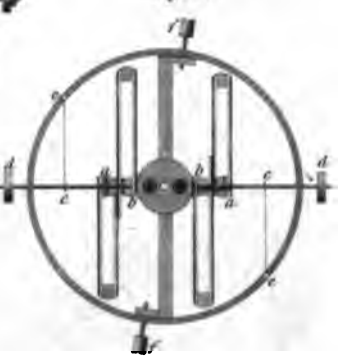


Fig. 11.

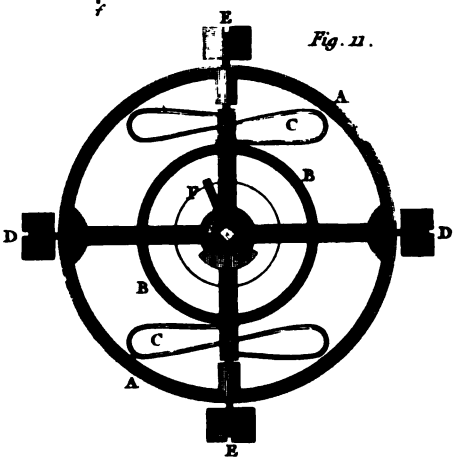


Fig. 9.

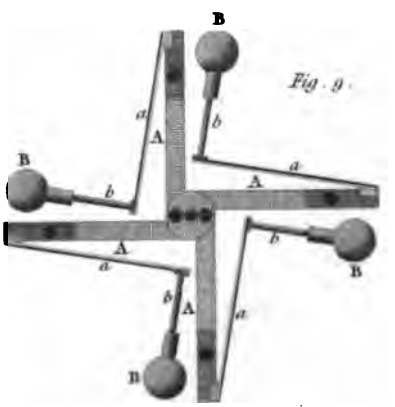
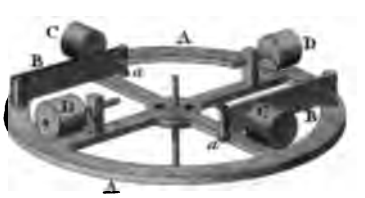


Fig. 10.



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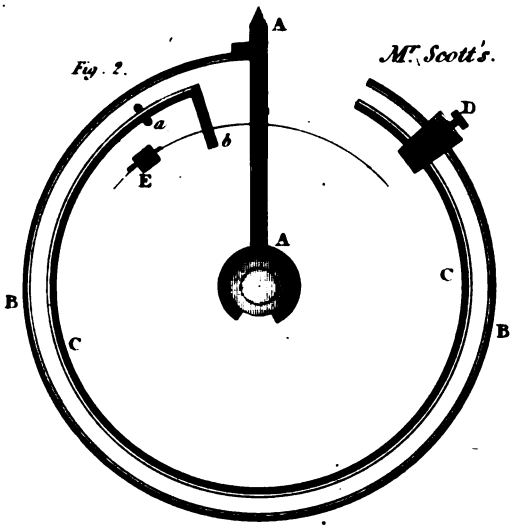
COMPENSATION CURBS AND BALANCES.

Mr. Scott's.

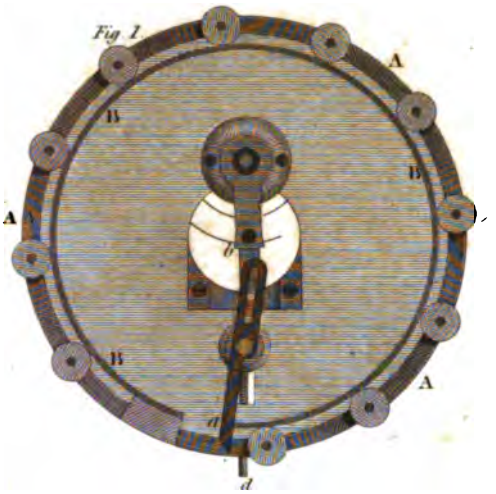
Fig. 2.



Side View

Mr. Cumming's.

Fig. 1.



Mr. Hardy's, balance.

Fig. 3.

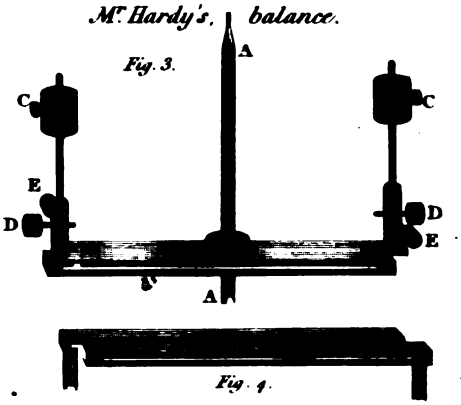
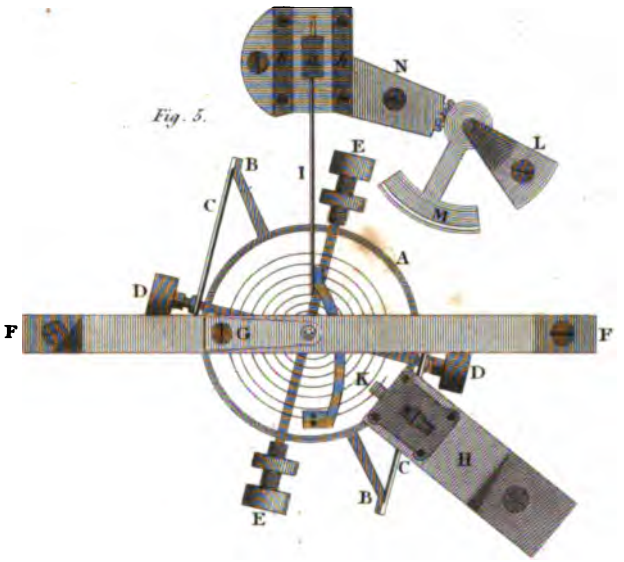


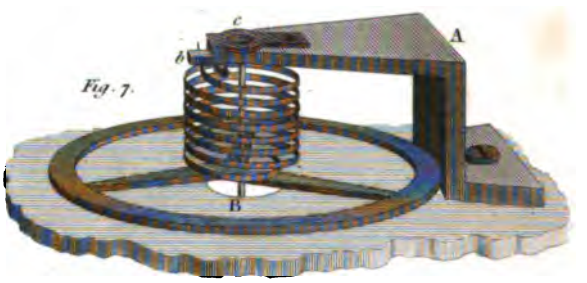
Fig. 4.

Fig. 5.



Mr. Hardy's, Isochronal compensation.

Fig. 7.



Berthoud's.

Fig. 6.

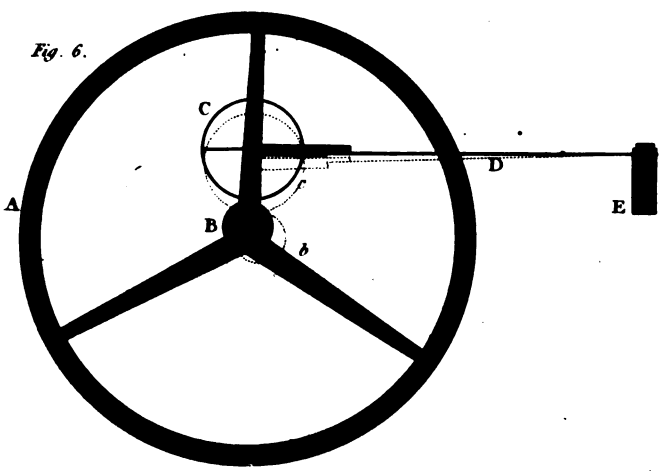
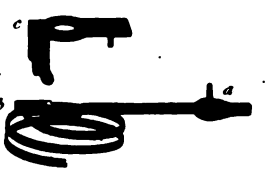


Fig. 8.



J. Farey Junr. delin. Published as the Act directs. 1817. by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Lowry Sc.

DIAL WORK OF A CLOCK SHEWING THE MOON'S AGE, PHASES &c.

Fig. 1.

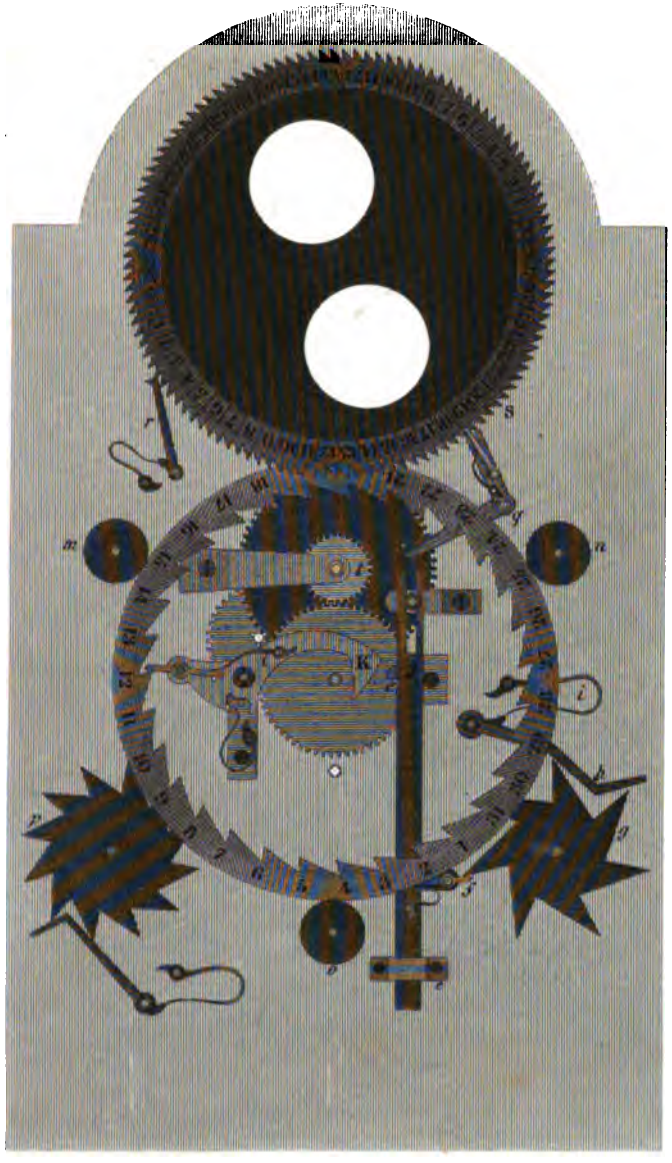
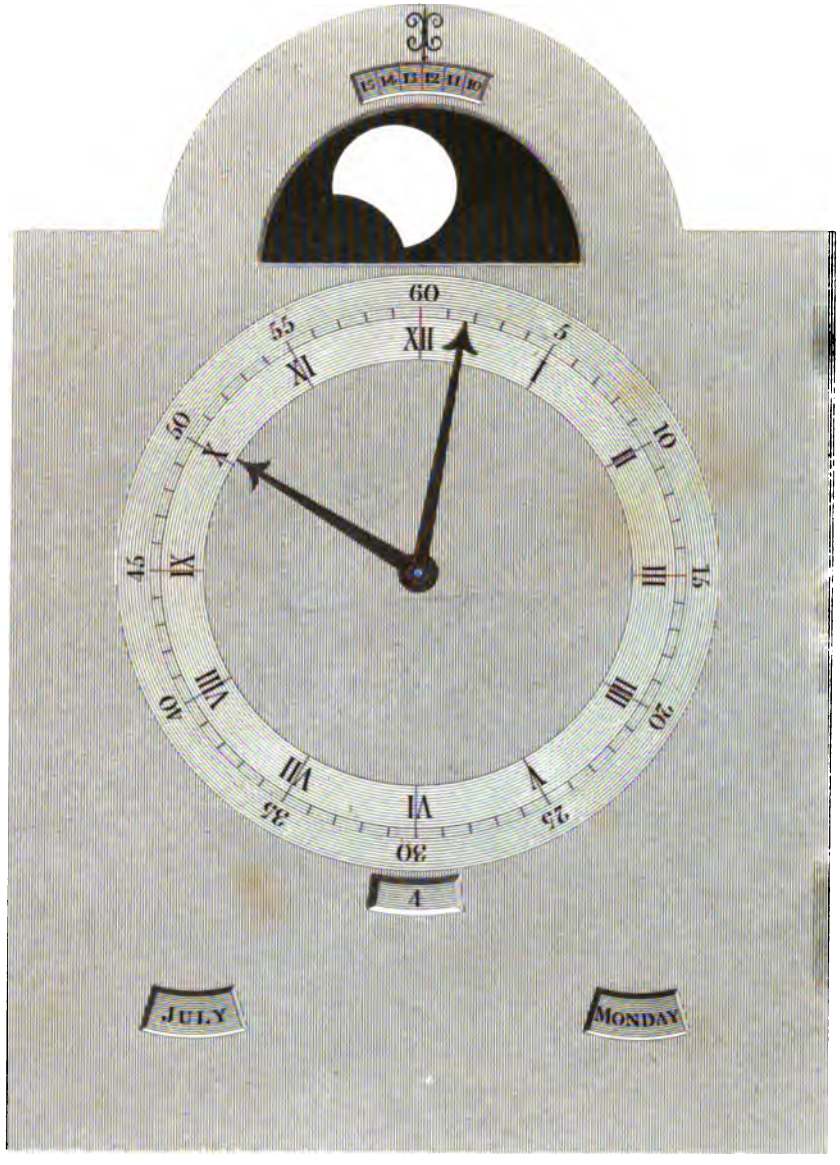


Fig. 2.



J. Farey Jun.r delin.

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Engraved by Wilson Lowry.

New DIAL work of a small spring Clock shewing the Phenomena of the Moon, &c.

Fig. 2.

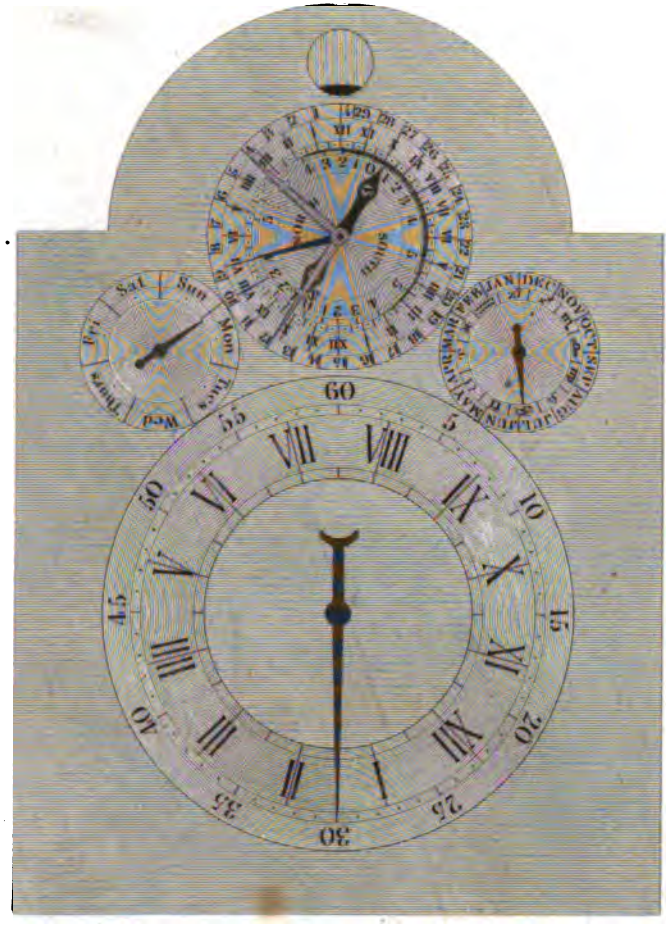
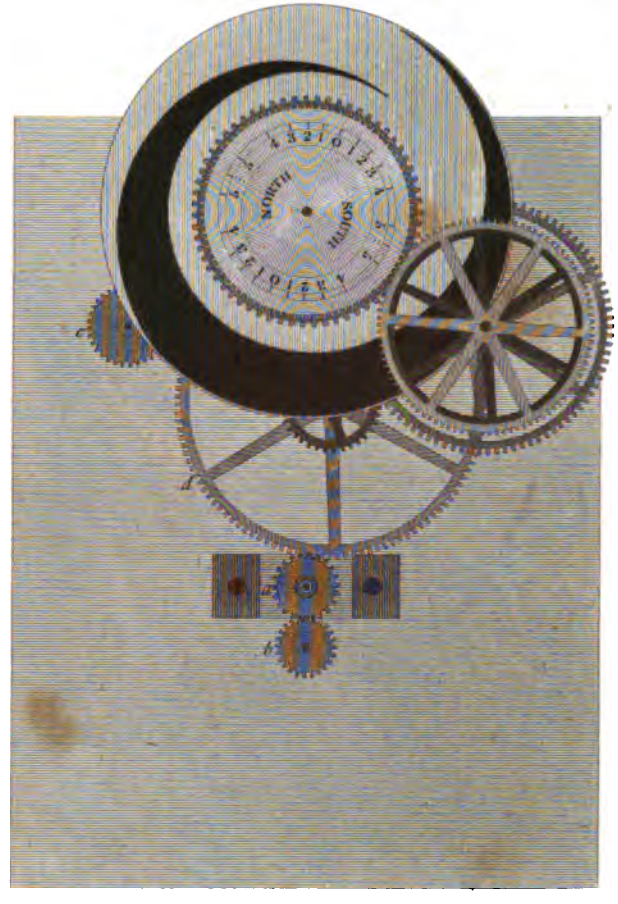


Fig. 1.



J. Farey Jun.r del in. *Published as the Act directs, 1812, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.* *Engraved by Wilson Lowry.*

HOROLOGY.

Dial Work.

Fig. 1.

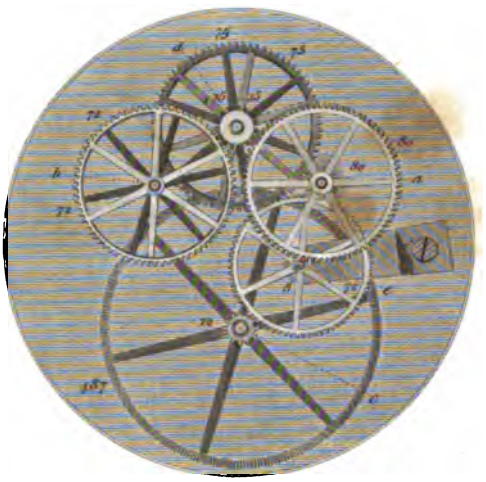
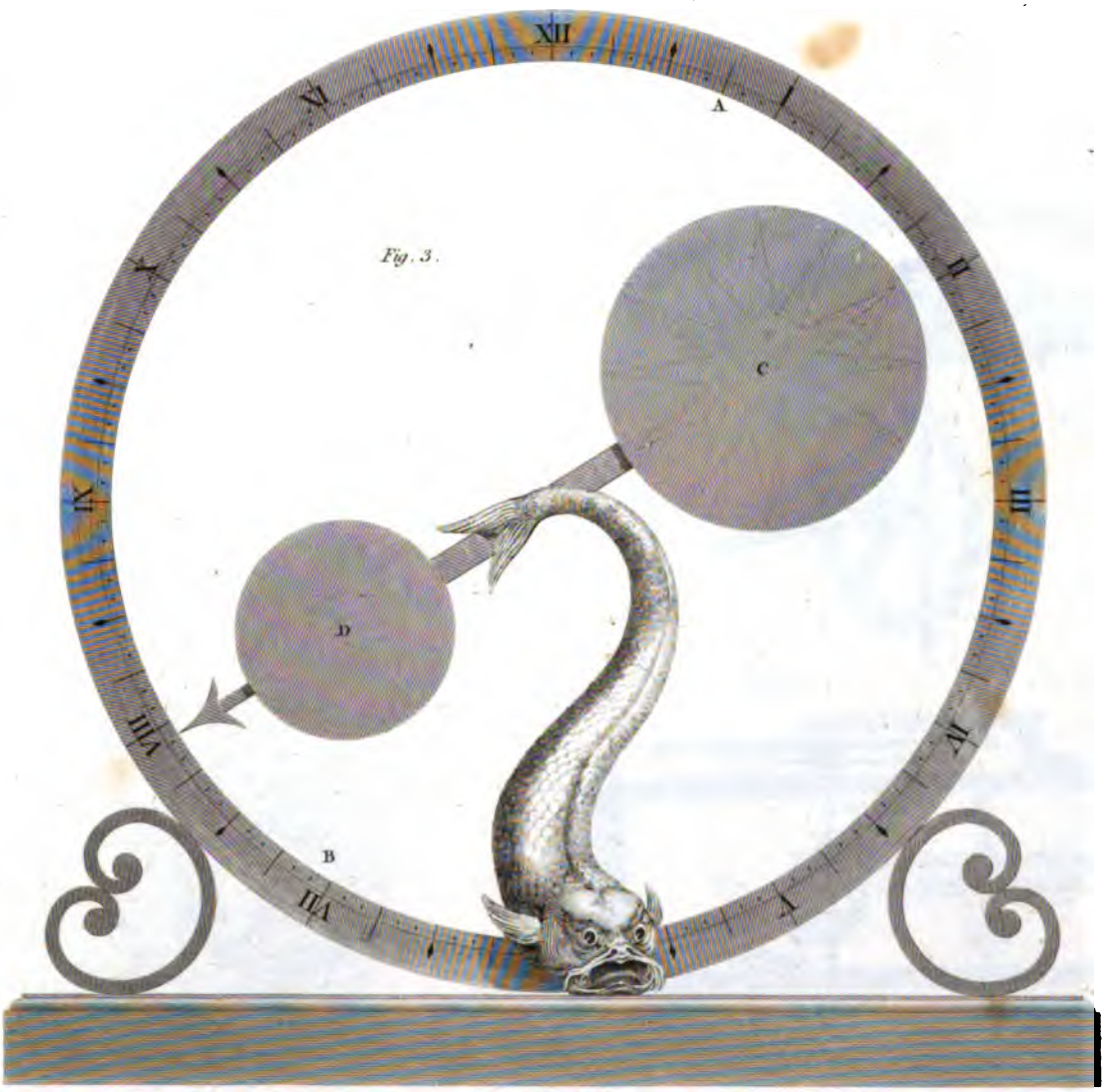


Fig. 2.

Fig. 3.



...n by J. Farey Jun.r

Published as the Act directs 1811, by Longman, Hurst, Rees, & Orme, Paternoster Row.

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ESCAPEMENTS.

Fig. 1.

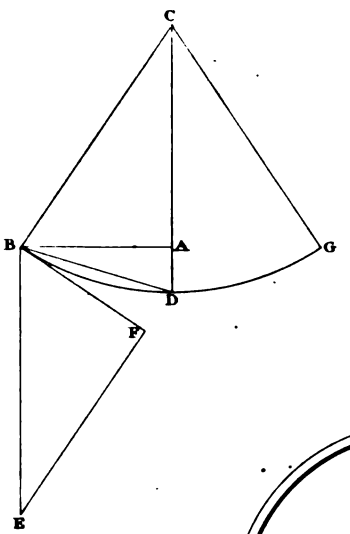


Fig. 2.

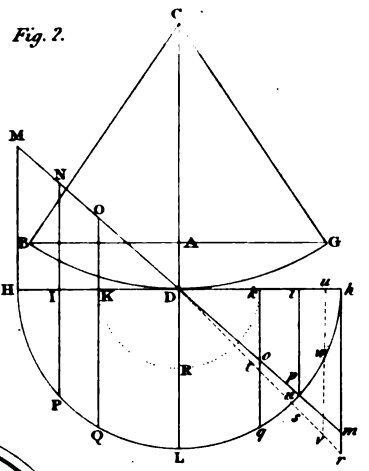


Fig. 3.

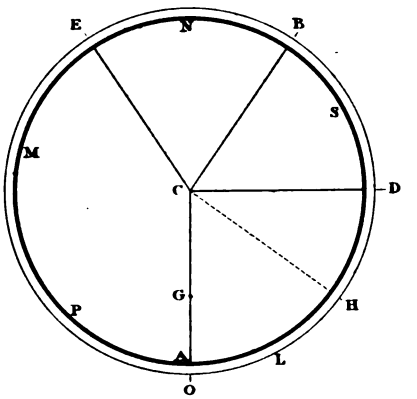
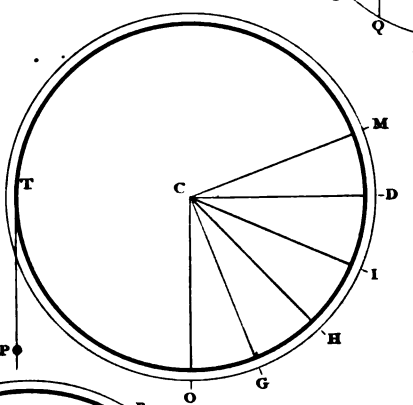
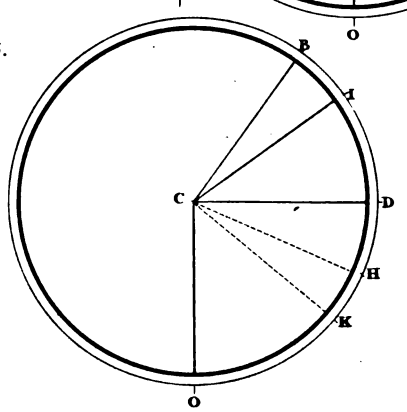


Fig. 4.



Mr. Atwood's Theory of the Balance.

Fig. 5.



Crown Wheel.

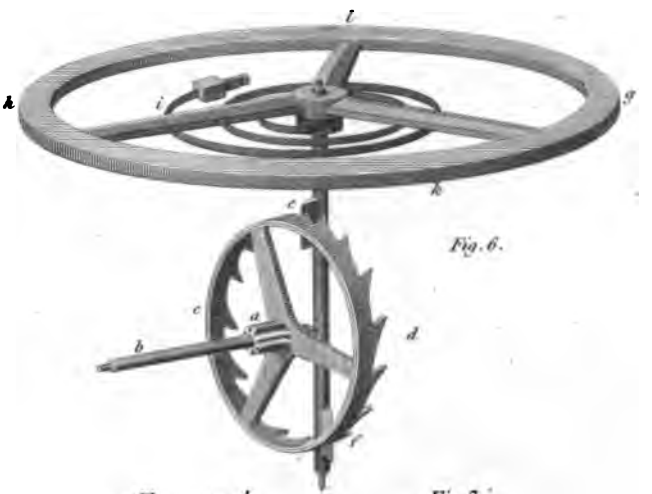
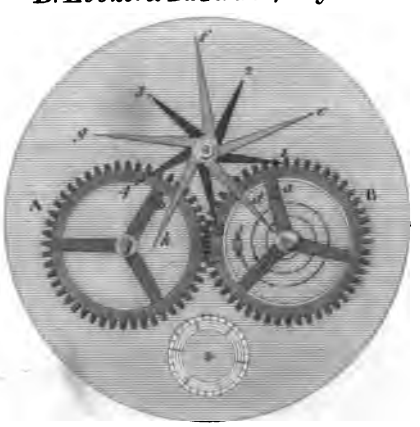
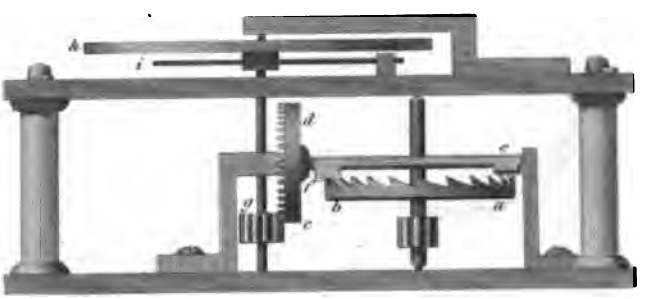


Fig. 6.

Dr. Hooke's & Du Tertre's, Fig. 8.



Huygens's. *Fig. 7.*



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Escapements.

Fig. 1.
Sully's.

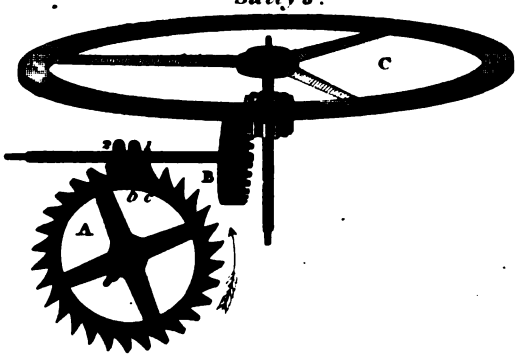


Fig. 2.
Graham's Horizontal.

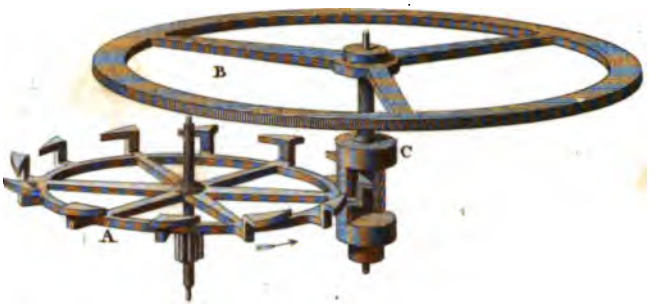


Fig. 3.
Anchor Escapement.

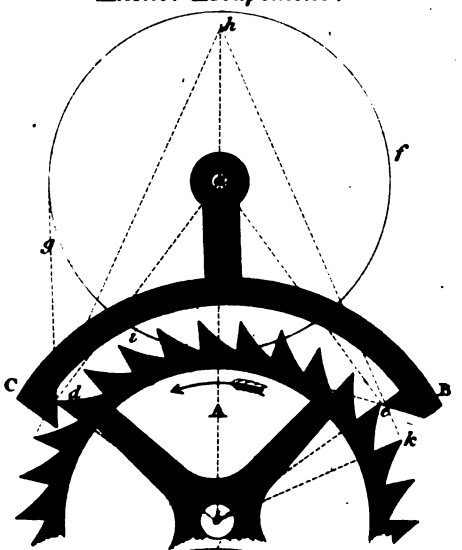


Fig. 5.

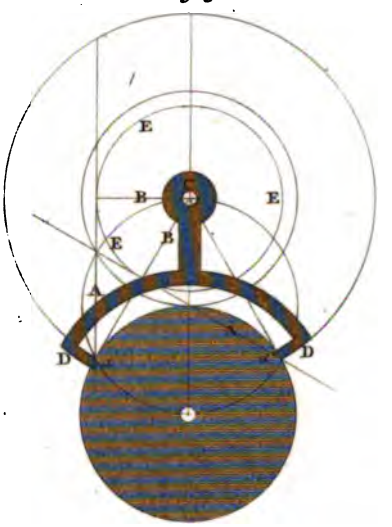


Fig. 7.
Bennet's Dead Beat.

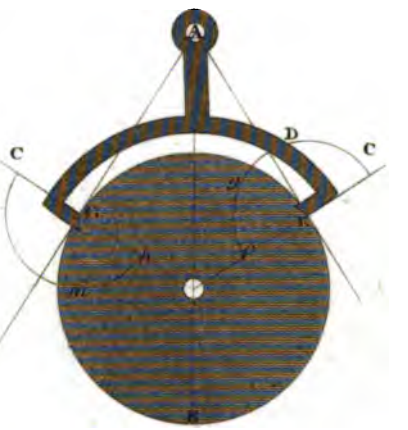


Fig. 6.
Grignon's Dead Beat.

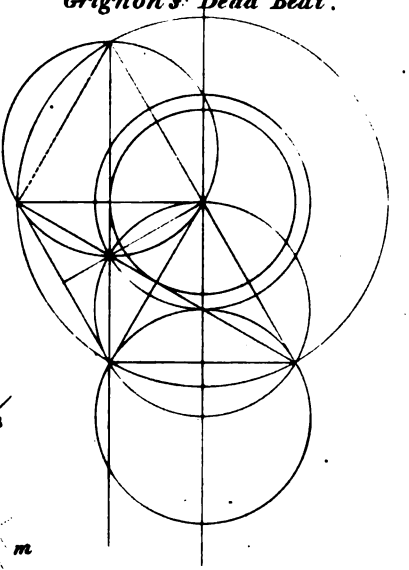


Fig. 4.
Graham's Dead Beat.

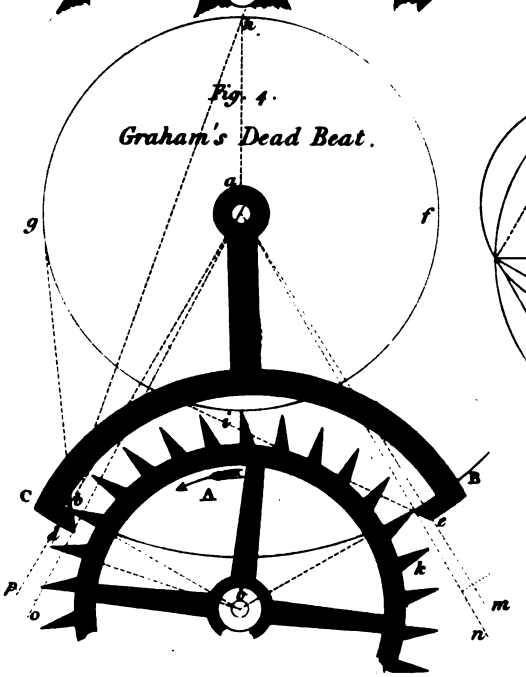
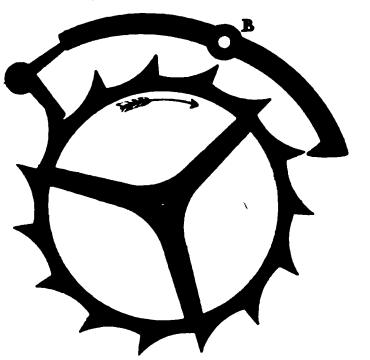


Fig. 8.
Thiout's.



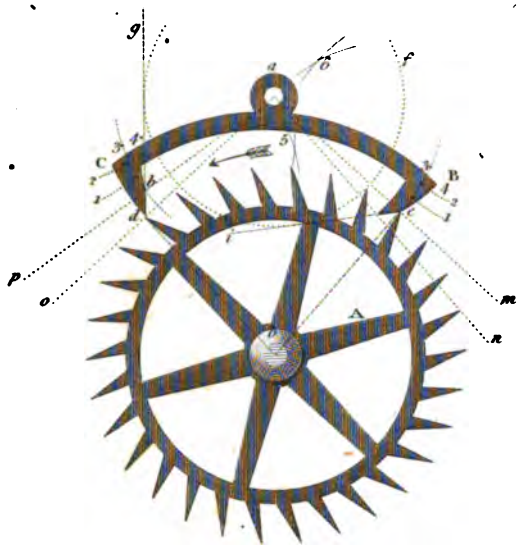
Carey delin. Published as the Act directs, 1823, by Longman, Hurst, Rees, Orme & Brown, Paternoster Row. Engraved by Lowry.

HOROLOGY.

ESCAPEMENTS.

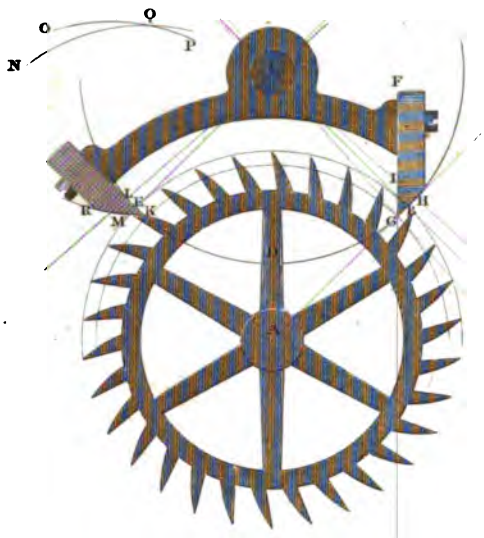
Berthoud's.

Fig. 1.



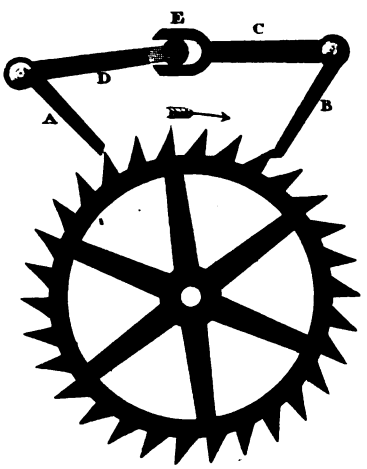
Smeaton's.

Fig. 2.



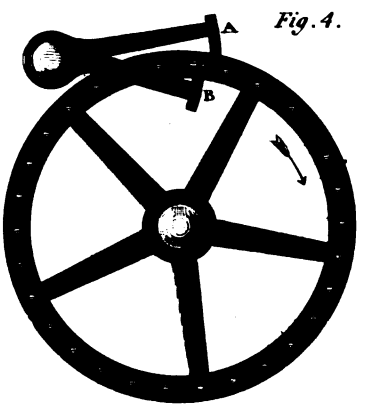
De Bethune's.

Fig. 3.



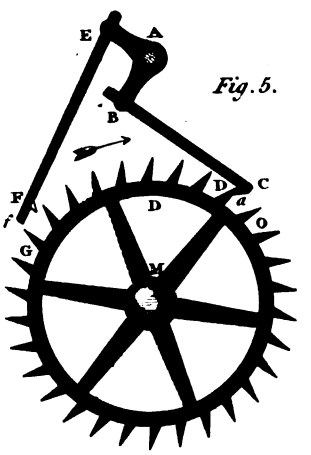
Amant's.

Fig. 4.



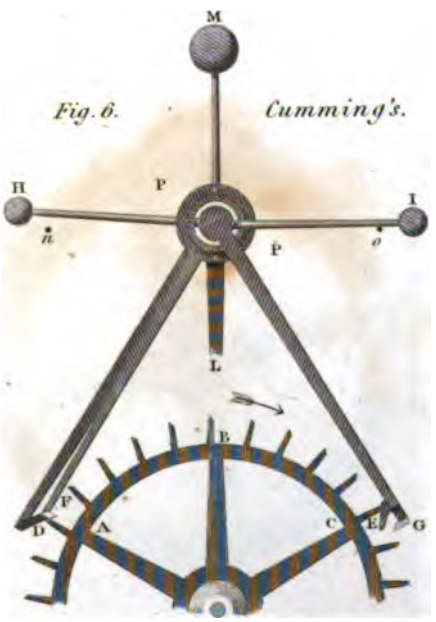
Harrison's.

Fig. 5.



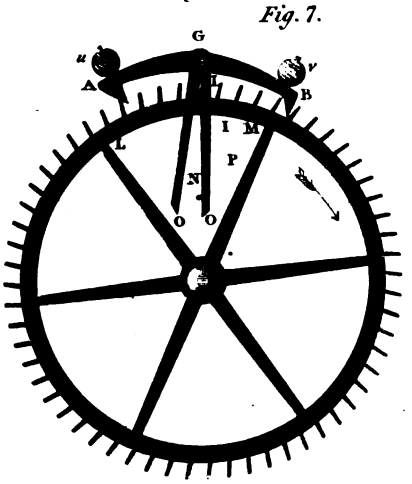
Cumming's.

Fig. 6.



Mudge's.

Fig. 7.



Peter Le Roy's.

Fig. 8.

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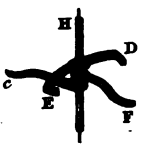
Lowry sculp.

HOROLOGY.

FRENCH ESCAPEMENTS for Chronometers.

Fig. 1.

Fig. 2.



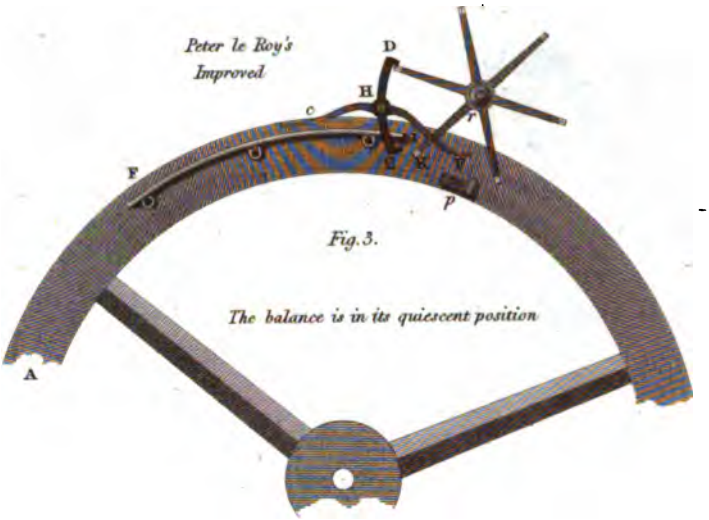


Fig. 3.

The balance is in its quiescent position

Berthoud's Detached

Fig. 4.

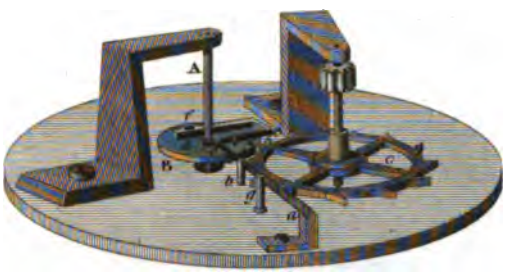


Fig. 6.

Berthoud's without a Spring

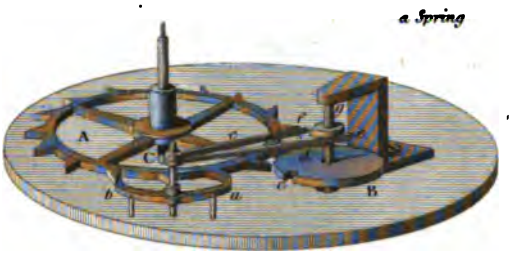


Fig. 5.

Berthoud's Improved N°. 60.

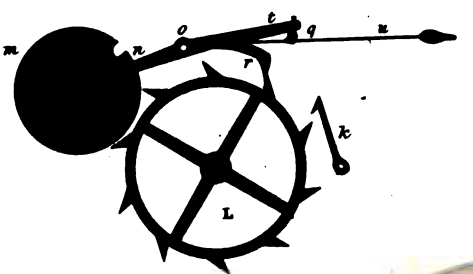
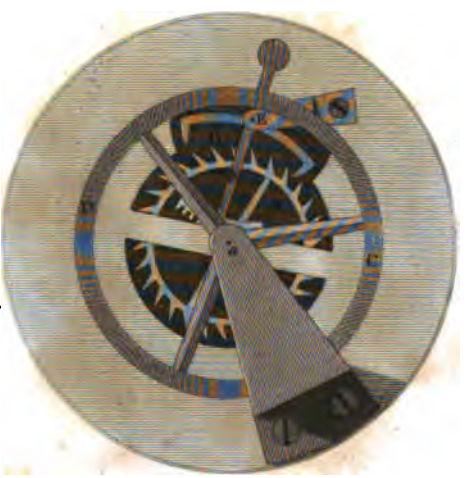


Fig. 7.

rthoud's with Spring and tent in 9.

Fig. 8.

Berthoud's Isochronal



y del. *Published as the Act directs, 1816, by Longman, Hurst, Rees, Orme, & Brown, Paternoster Row, London.* *Lowry sculp.*

ESCAPEMENTS.

Mudge's Fig. 1.

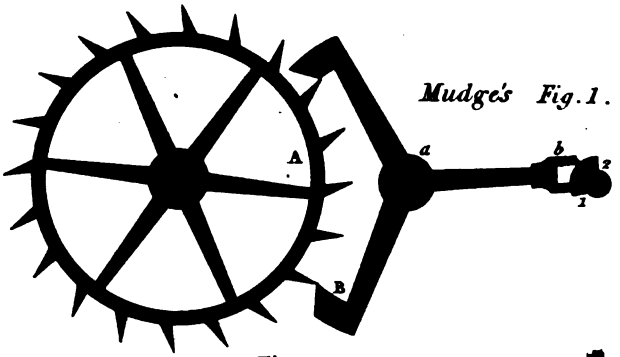
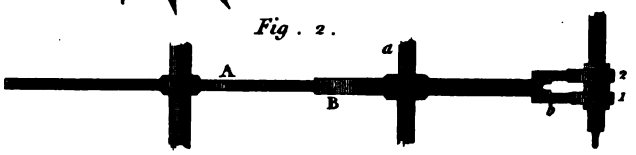
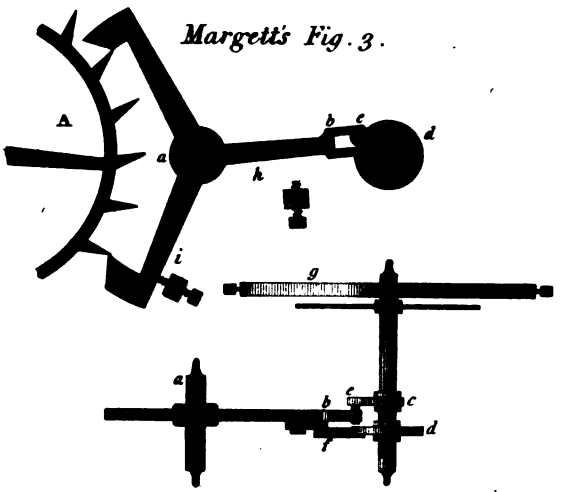


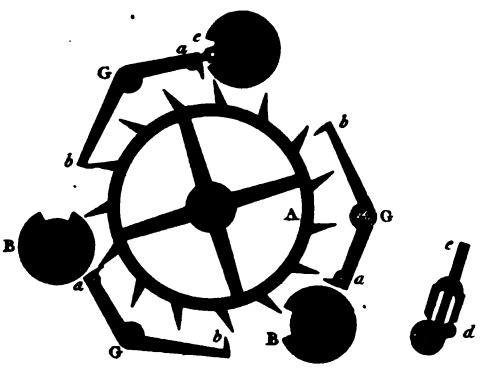
Fig. 2.



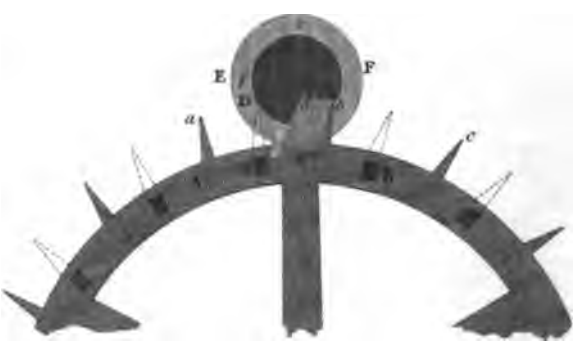
Margett's Fig. 3.



Robin's Fig. 4.

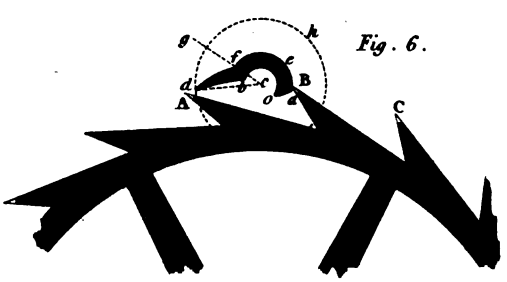


Duplex Fig. 5.

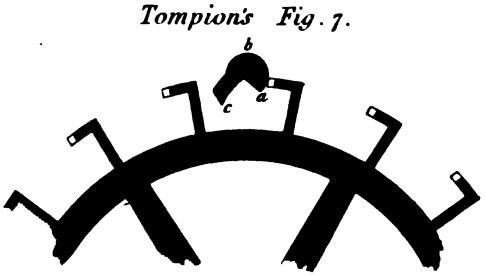


Escapement a Virgule

Fig. 6.

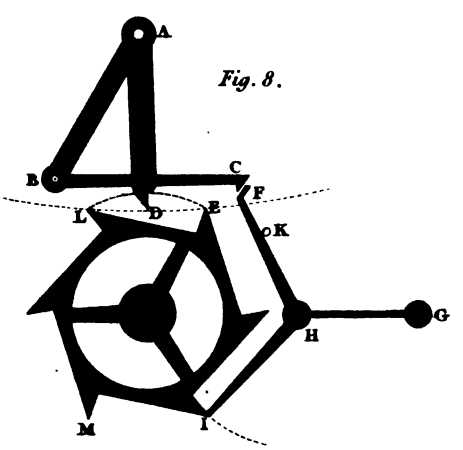


Tompion's Fig. 7.



Free for a Pendulum

Fig. 8.



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HOROLOGY.

ESCAPEMENTS &c.

Fig. 1.
Berthoud's.

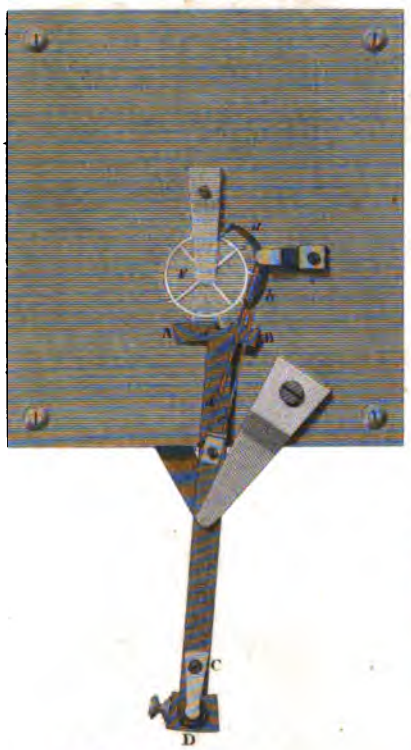


Fig. 2.
Nicholson's.

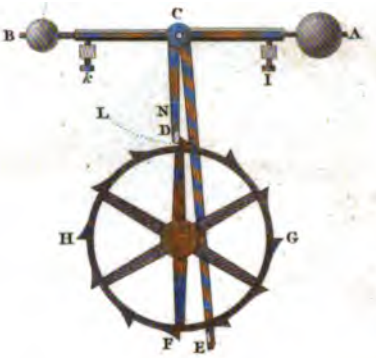


Fig. 5.
Maſsey's

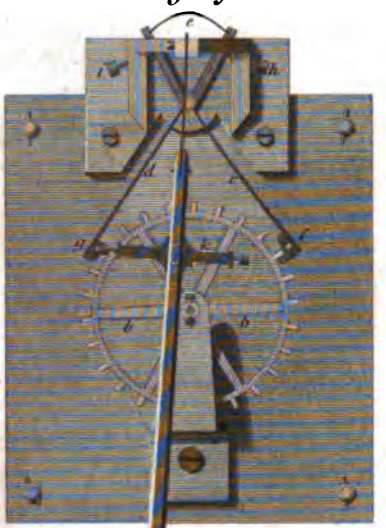


Fig. 3.
Goodriche's

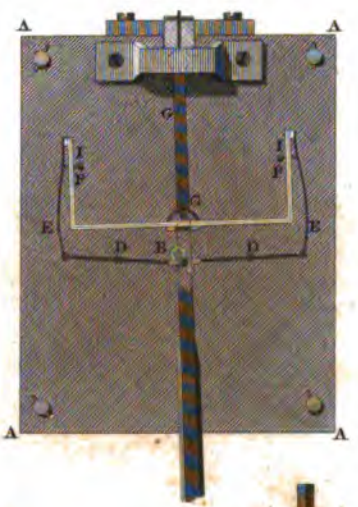


Fig. 4.

Fig. 6.

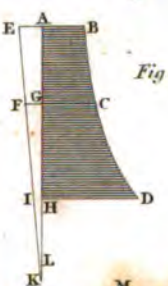
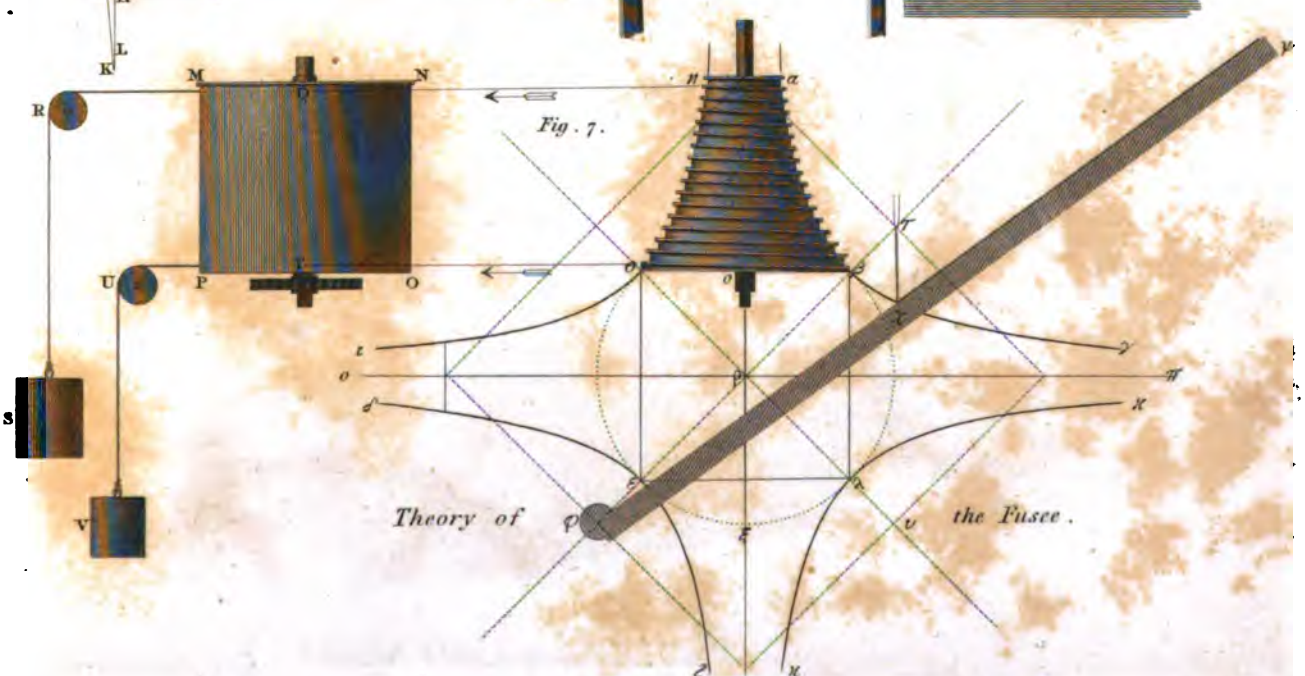


Fig. 7.



Theory of the Fusee.

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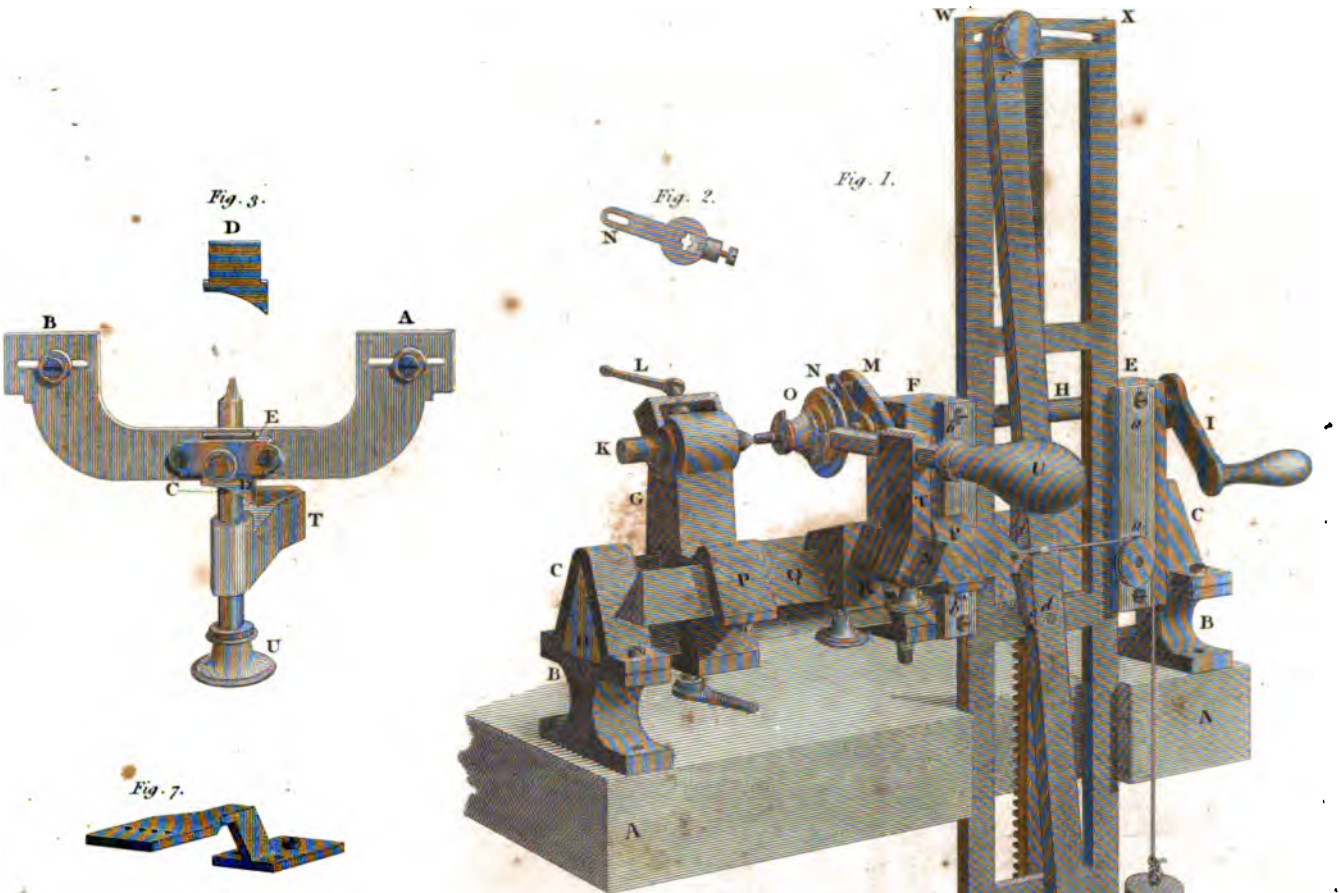
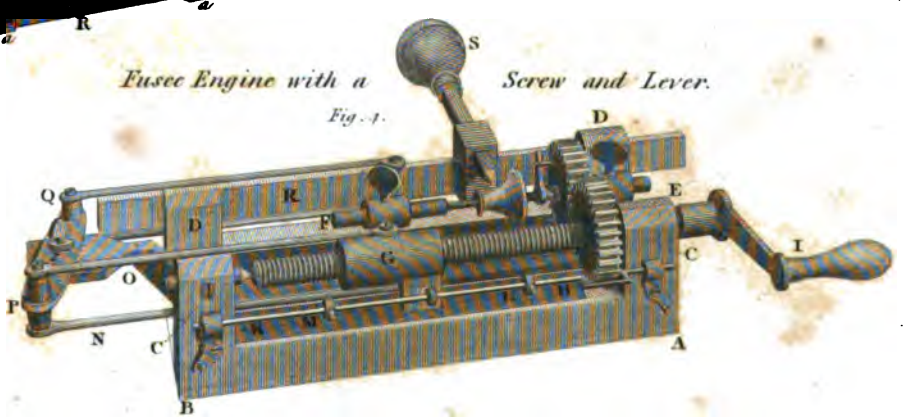
FUSEE ENGINE acting by an inclined Plane.



Fusee Engine with a Screw and Lever.



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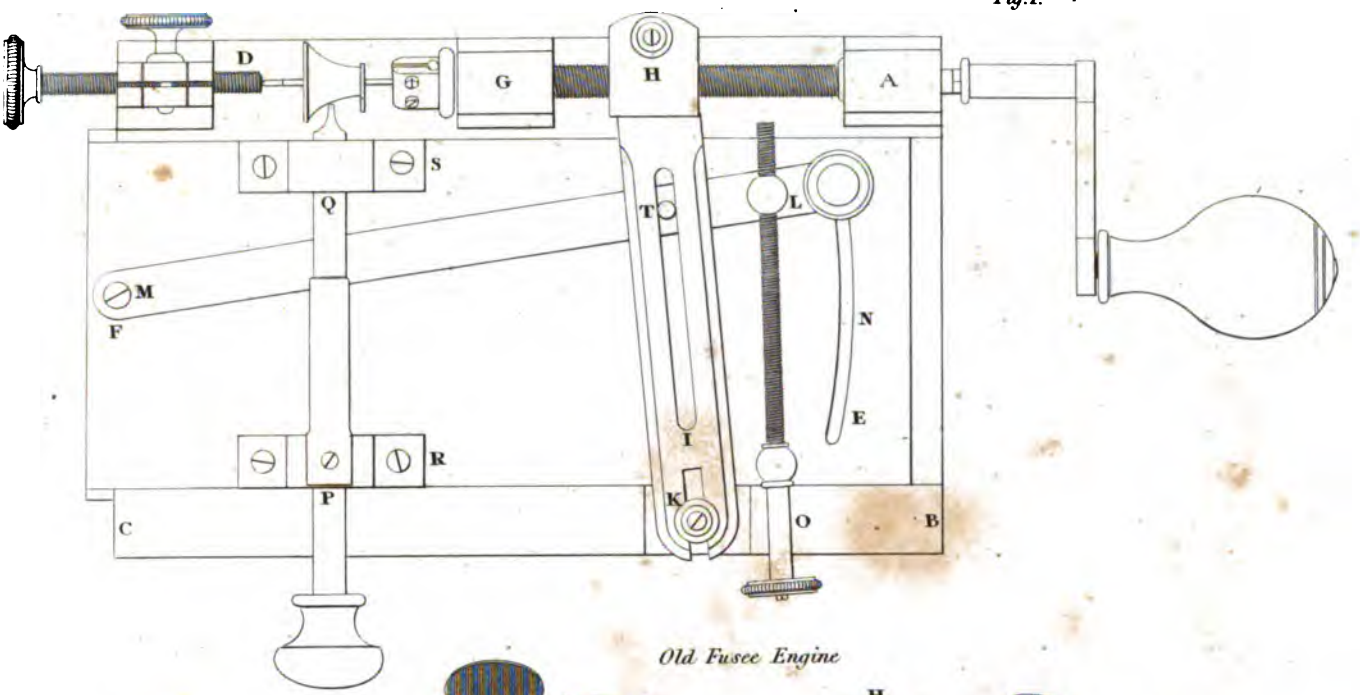
HOROLOGY.

FUSEE ENGINES and FUSEE FRAME.

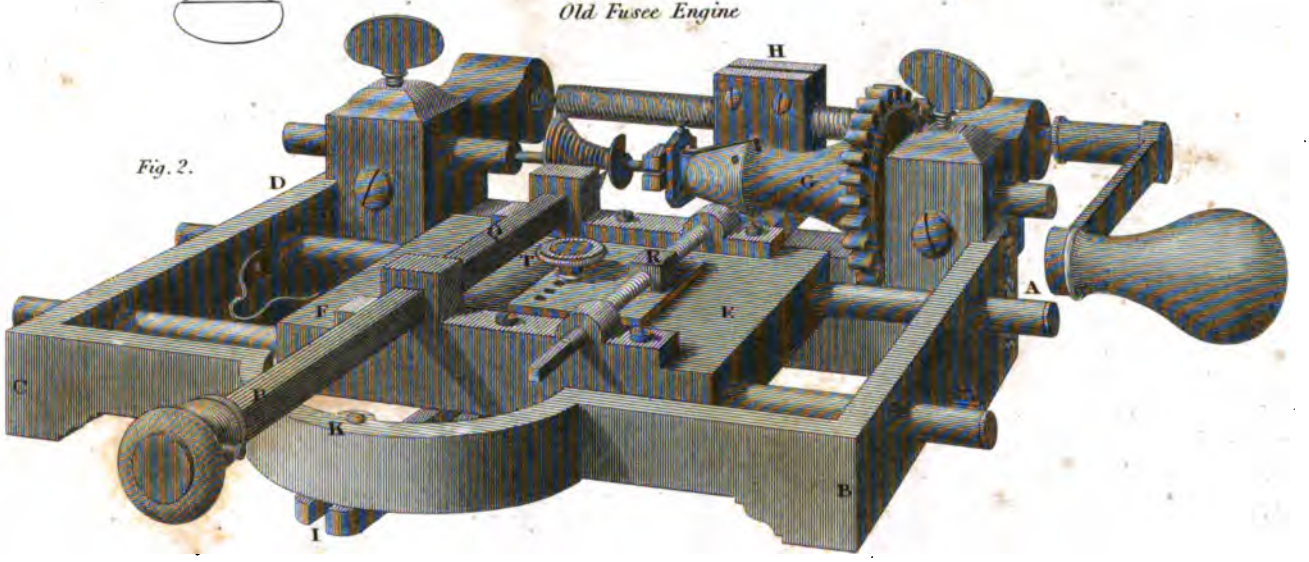
Common Fusee Engine

Fig. 1.



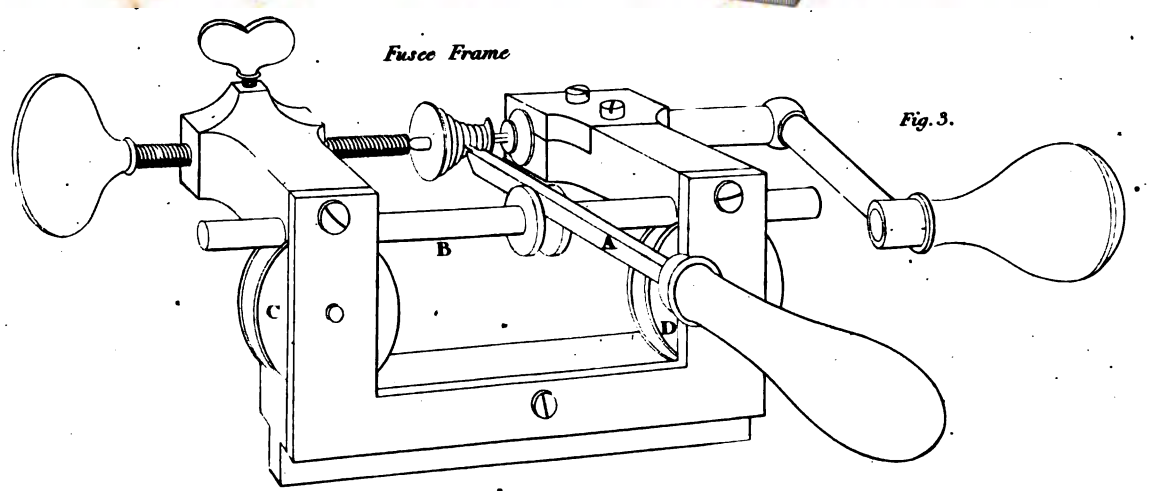
Old Fusee Engine

Fig. 2.



Fusee Frame

Fig. 3.



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HOROLOGY.

COMPENSATING PENDULUMS.

Fig. 1.

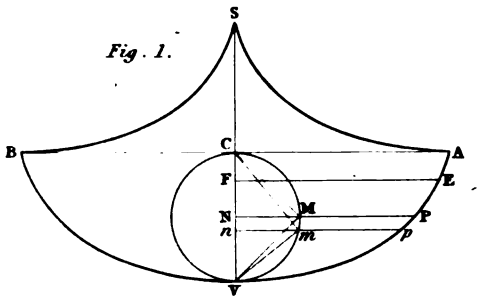


Fig. 2.

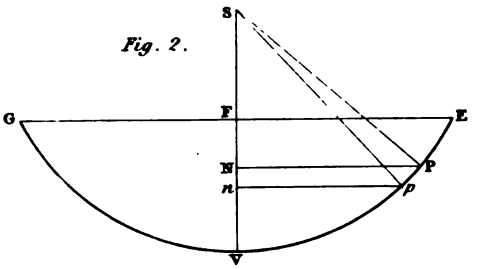
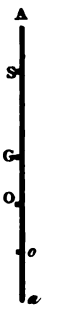


Fig. 3.



Graham's Mercurial

Fig. 4.

Regnauld's.

Fig. 5.

Deparcieux's

Fig. 6.

Fig. 7.

J. Le Roy's

Fig. 8.

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HOROLOGY.

COMPENSATING PENDULUMS.

Ellicott's

Fig. 1.

Troughton's
Rhombidal

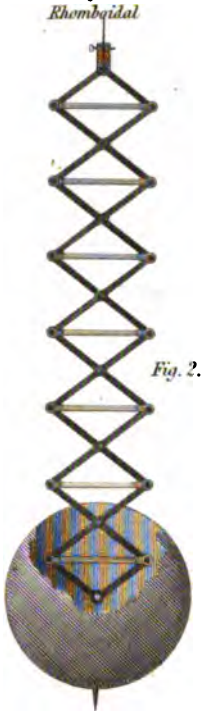


Fig. 2.

Berthoud's

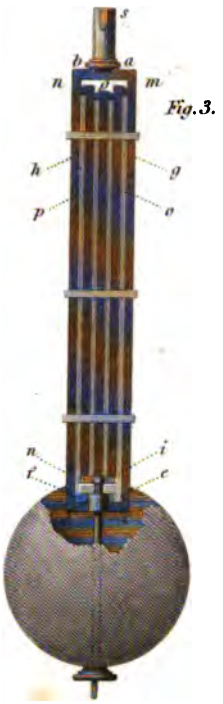


Fig. 3.

Troughton's
Mercurial

Fig. 4.

Dr. Fordyce's

Fig. 5.

Ritchie's

Fig. 9.

Ward's

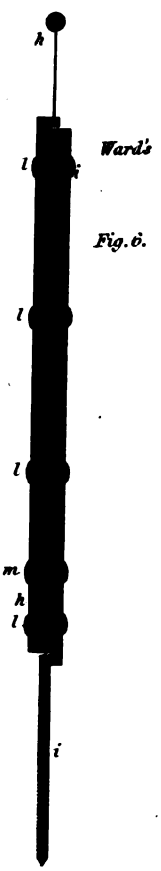


Fig. 6.

Reid's

Fig. 7.

Doughty's

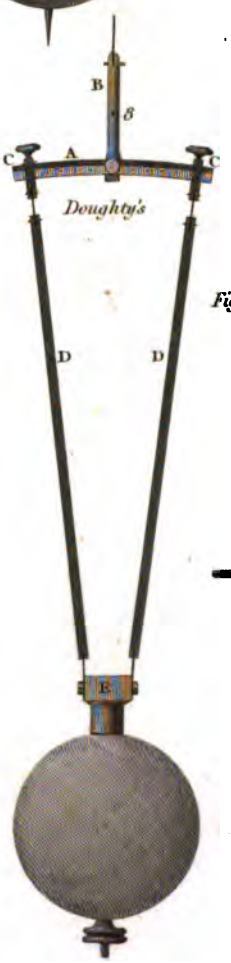
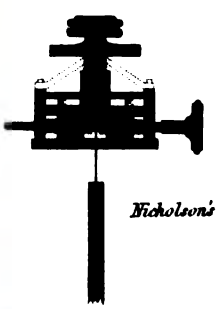


Fig. 8.

Fig. 10.

Nicholson's



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HOROLOGY.

REMONTOIR ESCAPEMENTS.

Fig. 1. Haley's.

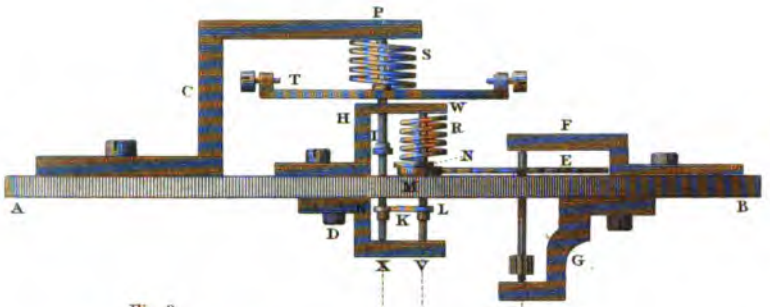


Fig. 3.

Fig. 2.

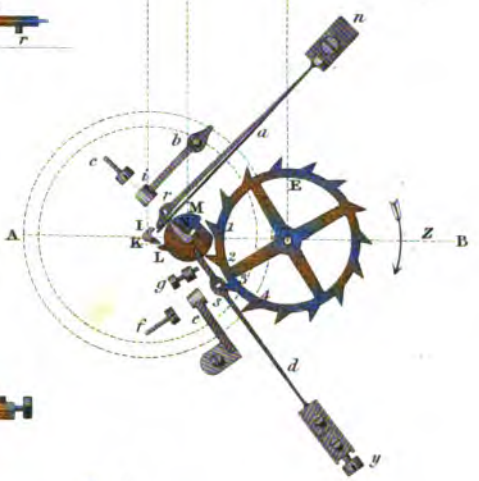


Fig. 4.

Fig. 6.

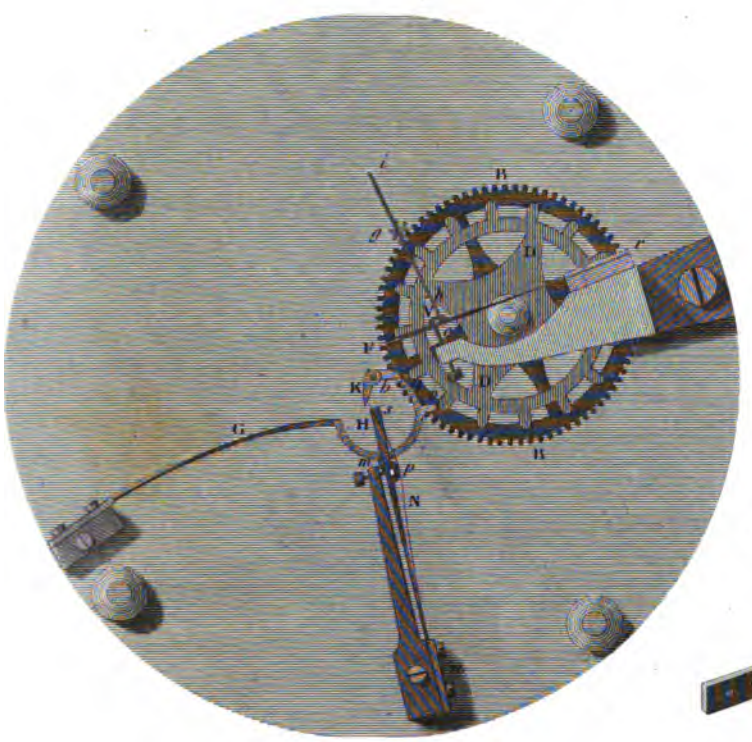
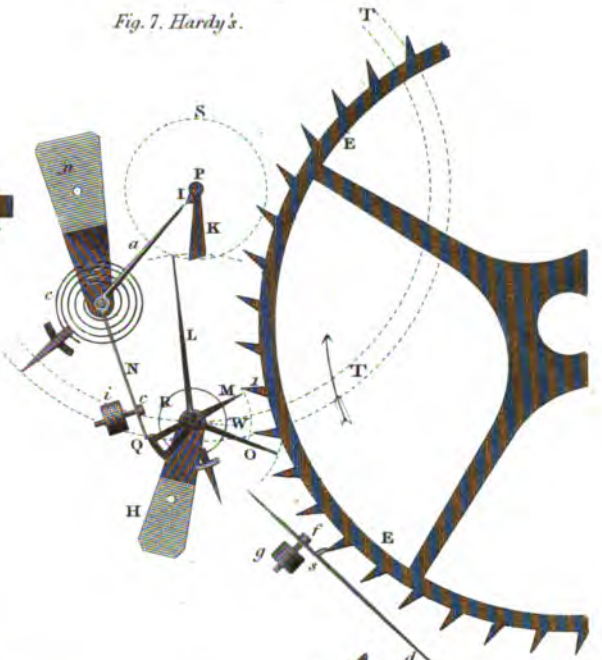


Fig. 7. Hardy's.



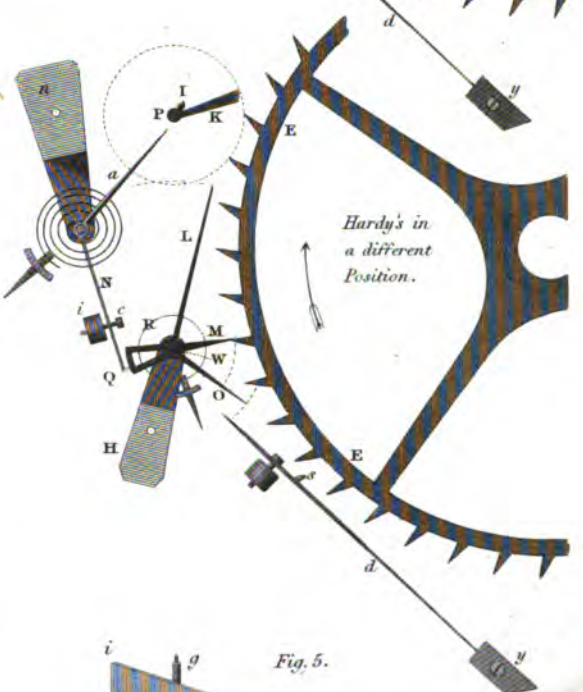
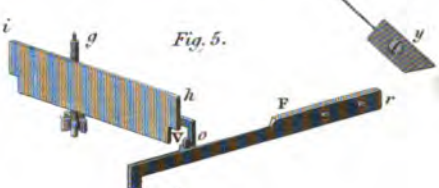


Fig. 5.



Breguet's

Farey del.

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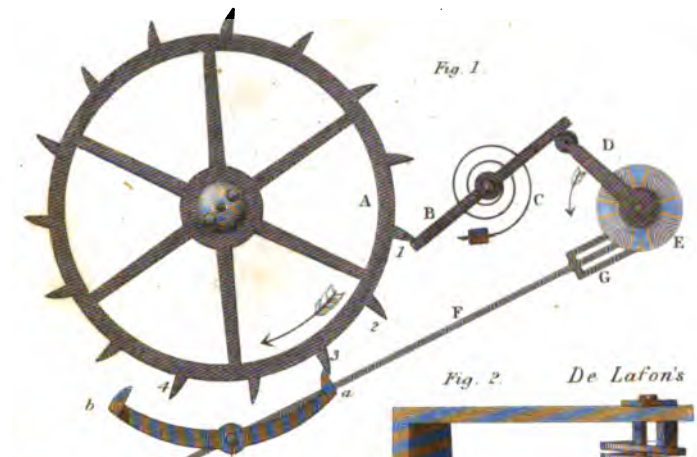
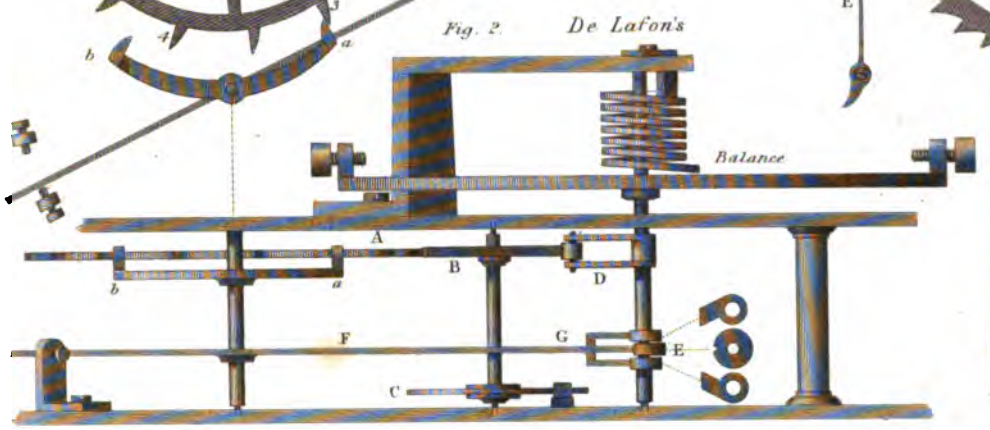
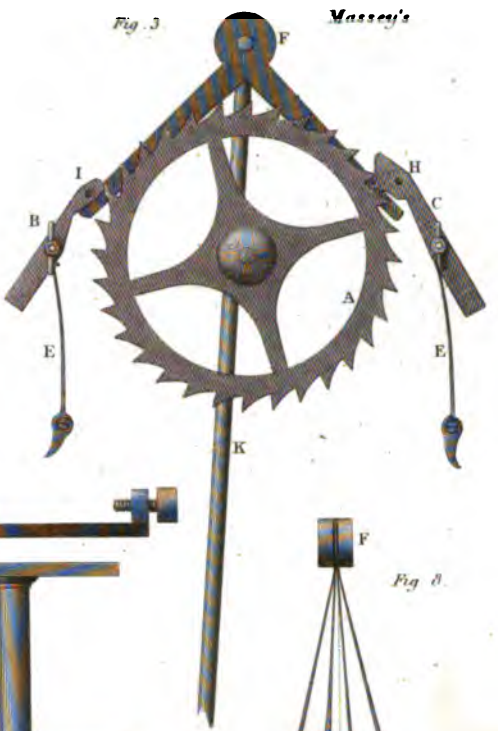
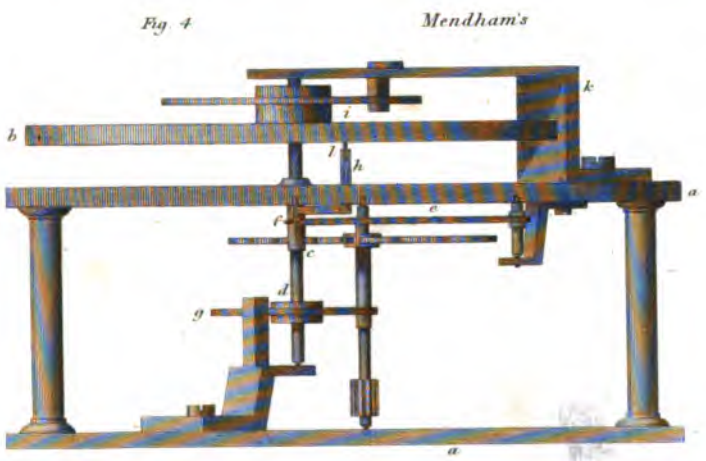
Remontoire Escapements









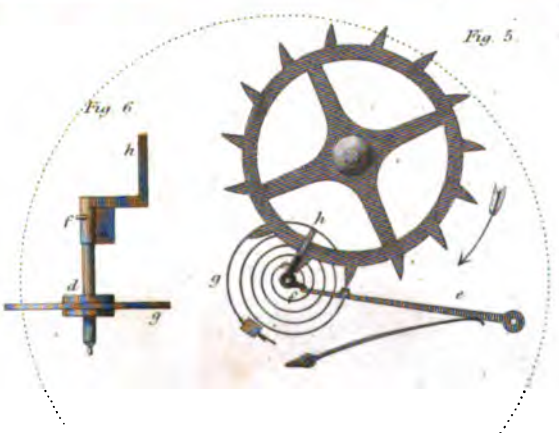


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Fig. 1.

Recordon's Renovateur.

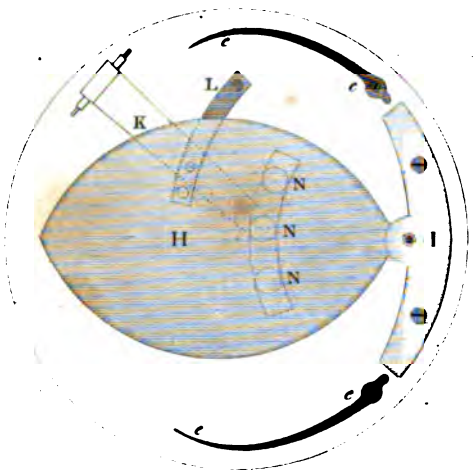
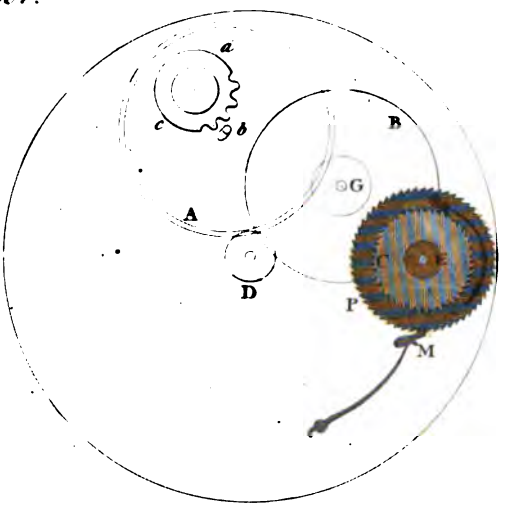


Fig. 3.

Fig. 2.



WATCH with MUSIC.

Fig. 4.

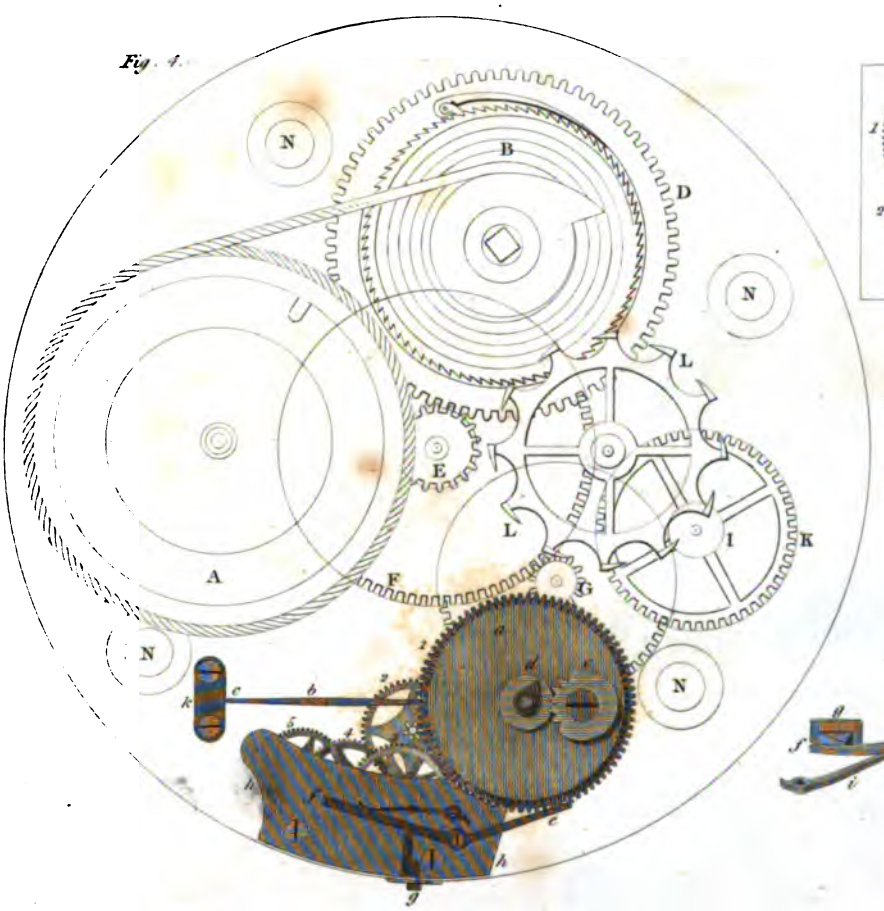


Fig. 7.

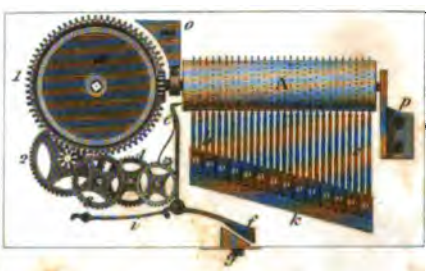
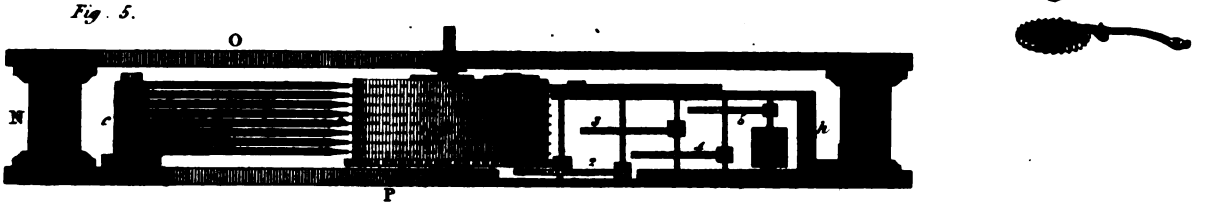


Fig. 8.

Fig. 9.

Fig. 6.

Fig. 5.



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COMMON WATCH

Fig. 7.

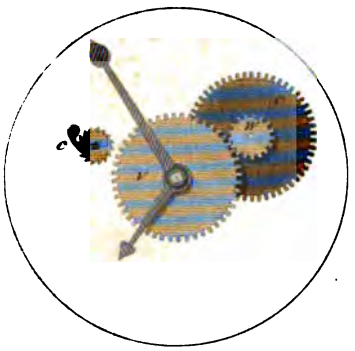


Fig. 5.

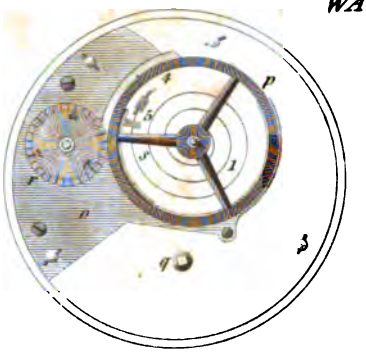


Fig. 1.

Fig. 3.

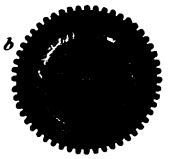


Fig. 4.

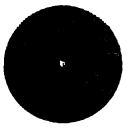


Fig. 6.

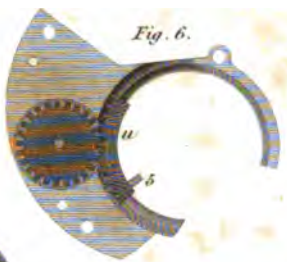


Fig. 8.

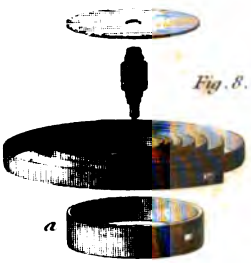
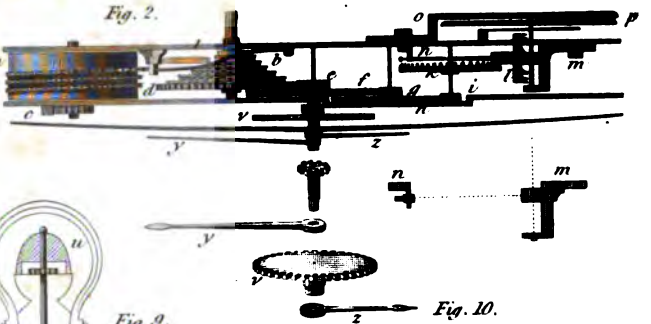


Fig. 2.



ALARUM

Fig. 12.

Fig. 9.

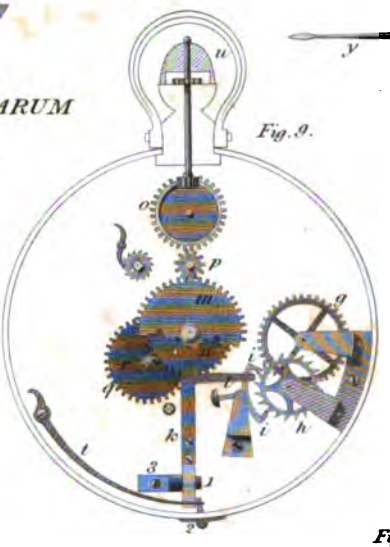


Fig. 10.

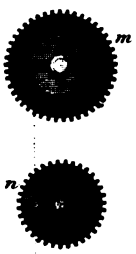
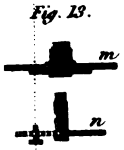


Fig. 13.



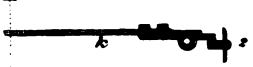


Fig. 14.

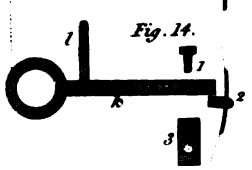
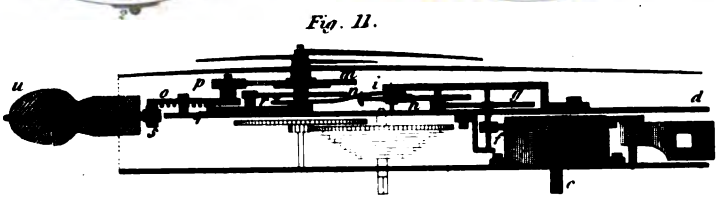


Fig. 11.



ROLLING WATCH

Fig. 15.

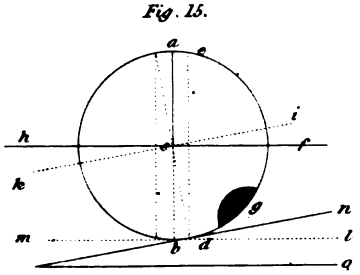


Fig. 16.

Fig. 17.

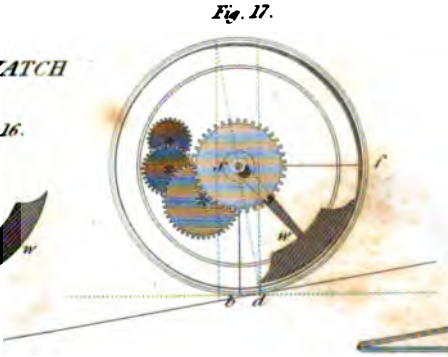


Fig. 18.

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REPEATING WATCH.

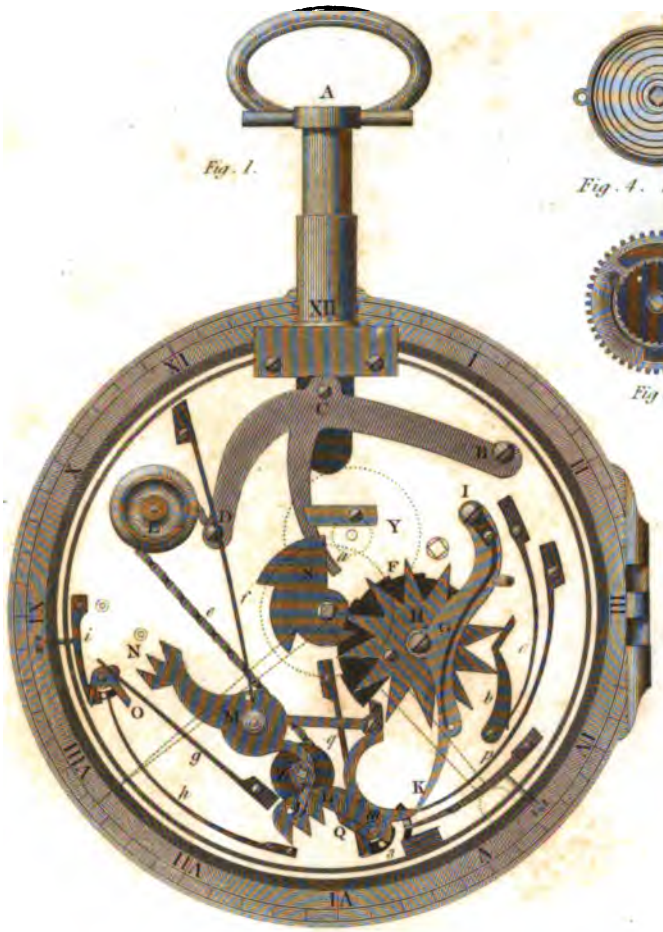


Fig. 1.

Fig. 4. Spring

Fig. 5.

Fig. 2.

Fig. 3.

WHEELWORK

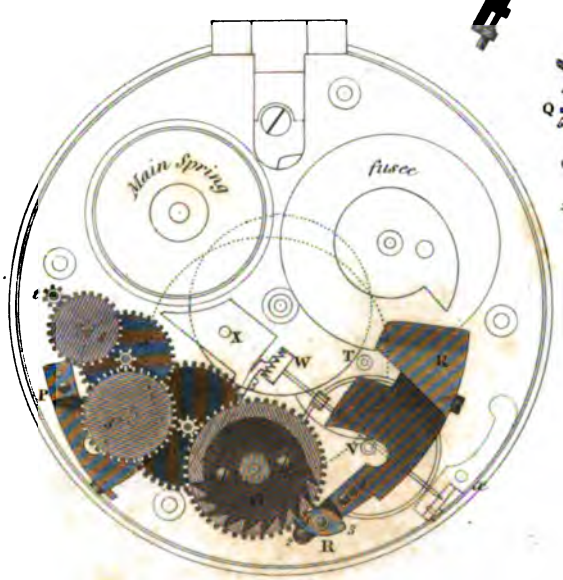
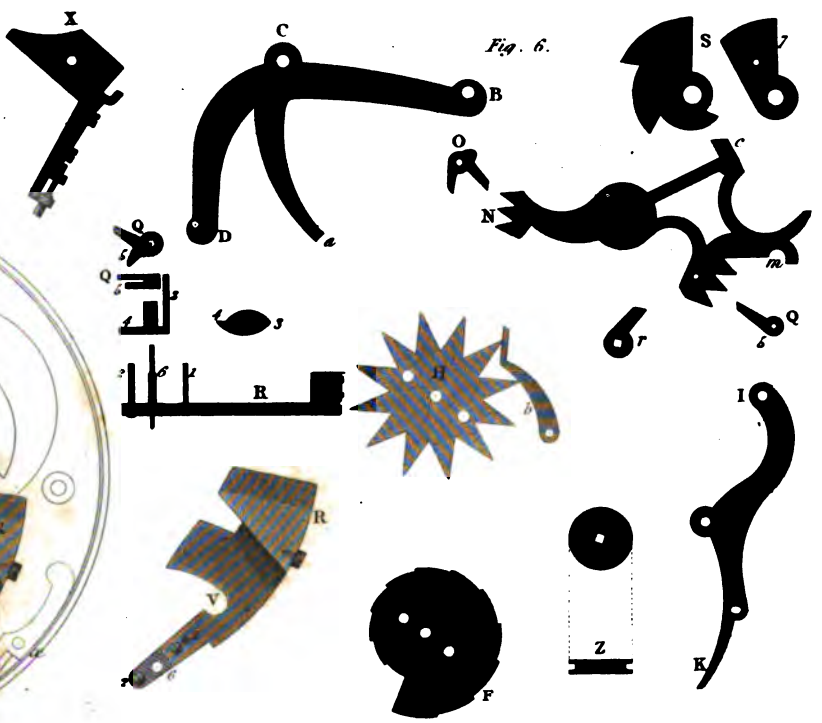


Fig. 6.



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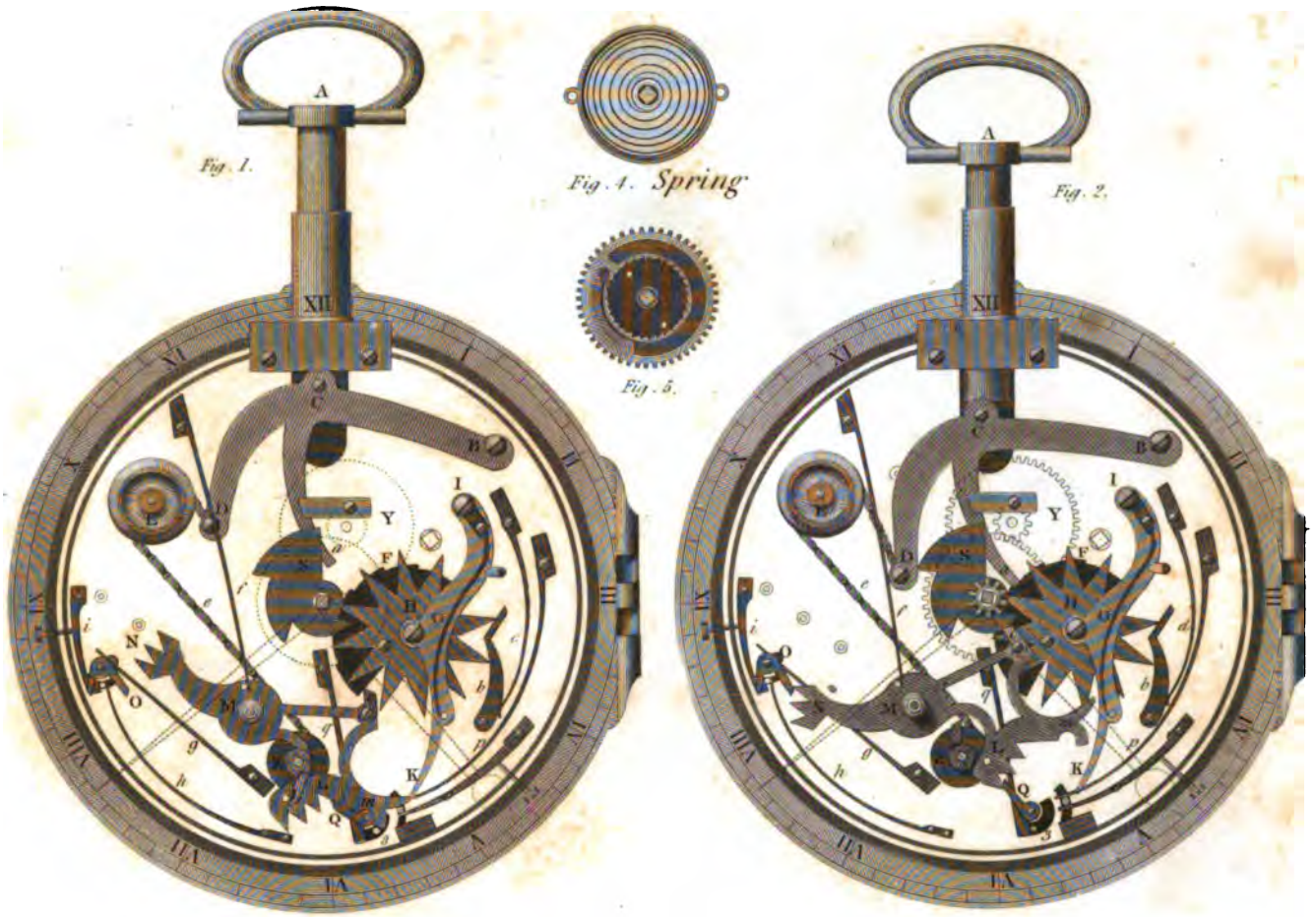
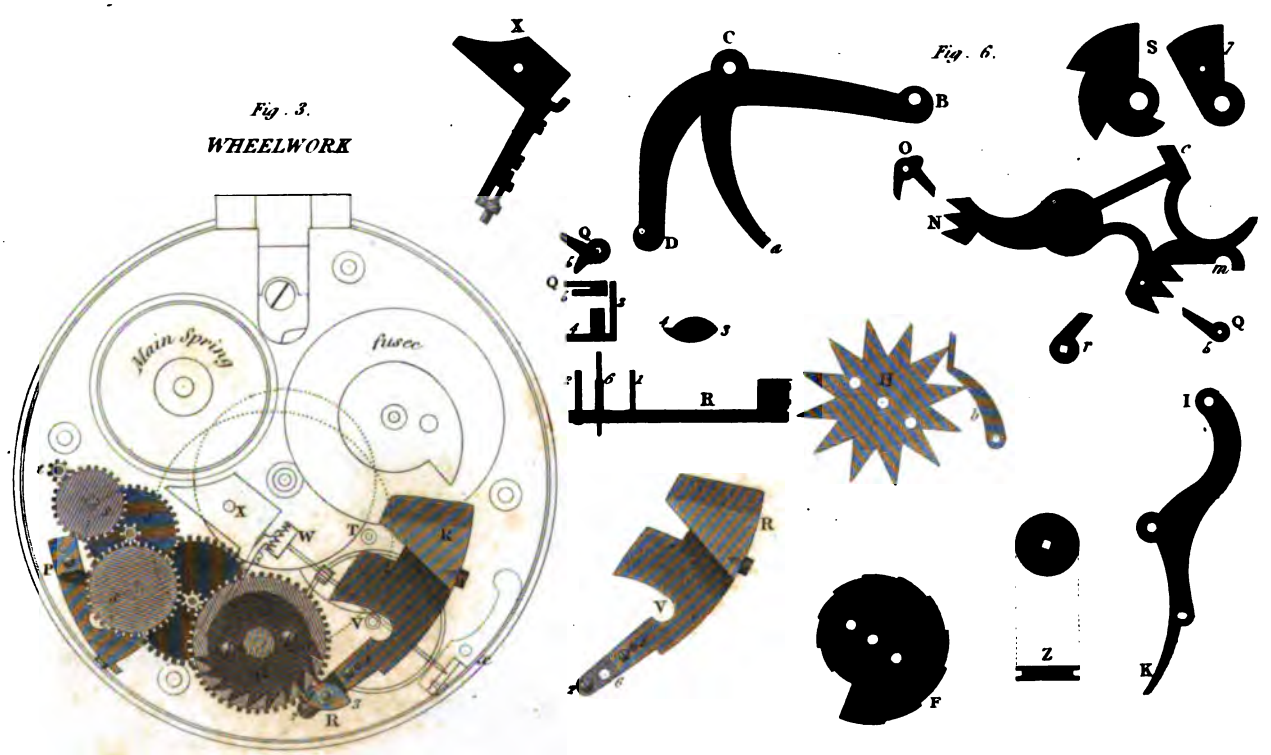
REPEATING WATCH.





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HOROLOGY.

REPEATING and ALARUM WATCHES.

Fig. 1.

Fig. 2.

Fig. 5.

Fig. 7.

Fig. 8.

Fig. 3.

Fig. 6.

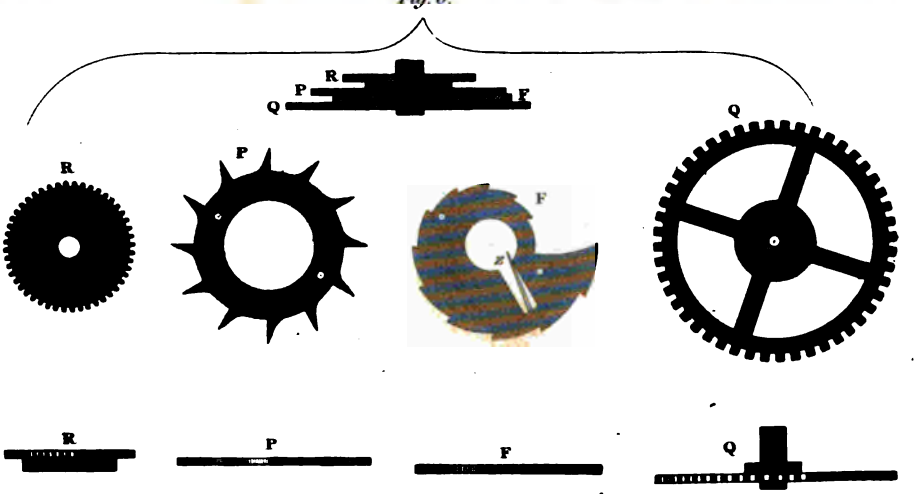
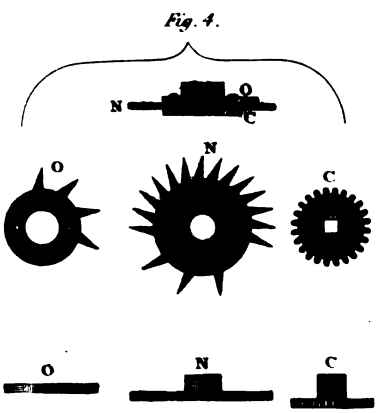


Fig. 4.



J. L. Vulliamy, Clock & Watch Maker, to the King, & Prince Regent, &c.ª

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HOROLOGY.
REPEATING WATCHES.

Fig. 4.

Fig. 5.

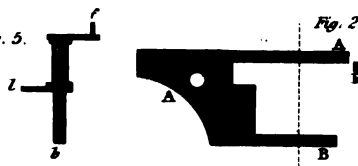


Fig. 2.

Mr Elliot's

Fig. 1.

Fig. 3.

Infallible Repeater by M.Berrollas

Fig. 6.

Detached parts

Fig. 8.

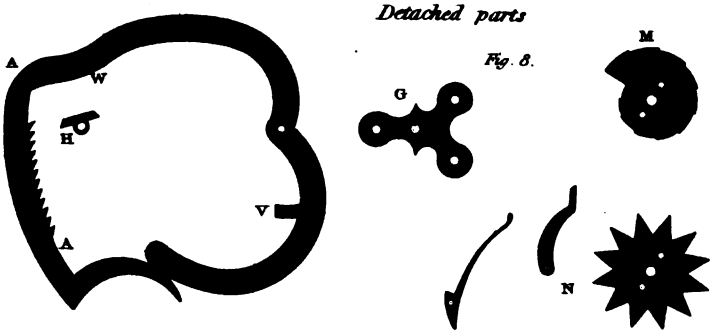
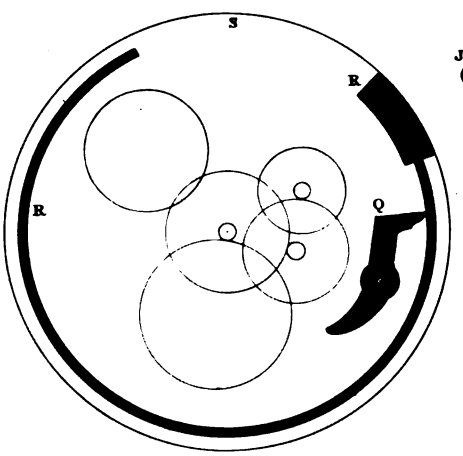
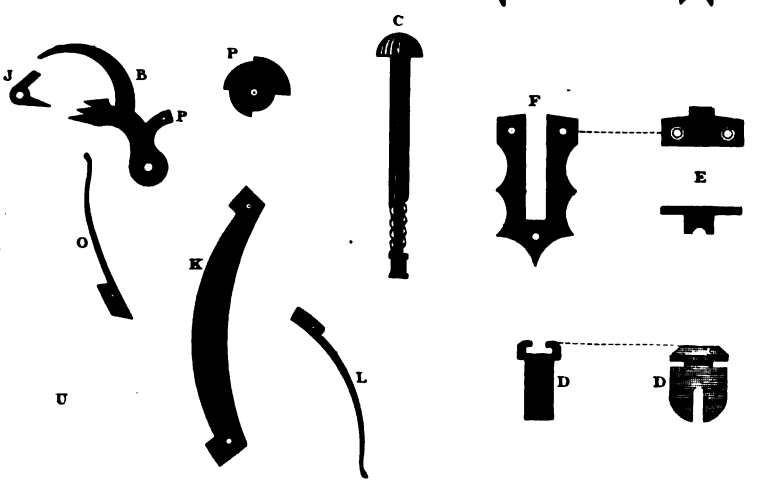


Fig. 7. *Calliper*





I. Farey Junr. delin.

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